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Status of Atlantic Salmon (*Salmo salar* L.) Stocks of Insular Newfoundland (SFAs 3-14A), 1997

by

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Abstract

The commercial Atlantic salmon fishery moratorium implemented in 1992 entered its sixth year in 1997. The moratorium placed on the Northern Cod Fishery in 1992, which should have eliminated by-catch of Atlantic salmon in cod fishing gear in SFAs 1-9, continued in 1997. A moratorium was placed on cod fishing in SFAs 10-14A in August 1993, which remained in effect in 1997 with the exception of a limited fishery in SFA 11. Several indicators pointed to increased returns of small salmon in 1997 for many rivers, particularly those on the western side of the Northern Peninsula and on the northeast and east coasts: substantially increased spawning escapements in 1992 which were anticipated to result in increased returns of adults with a modal smolt age of 3+ years in 1997; indications of record high (or nearly so) smolt production in 1996; increasing trends in smolt survival and good condition of smolts; record early smolt run timing, associated with good adult returns in the past; marine thermal habitat conditions in early 1997 were among the best up to that point. However, with the exception of Bay St. George (SFA 13), overall returns of small salmon in 1997 decreased from 1996. Total population sizes of small salmon in 1997 were as low or lower than those estimated for several years immediately preceding the salmon moratorium. Sea survival decreased at all smolt-counting facilities except Highland's River (Bay St. George). Most evidence points to increased mortality at sea as being responsible for the lower than expected returns of small salmon. Returns of large salmon (mainly repeat spawning grilse) in 1997 increased at most counting facilities and in some cases were the highest on record. Smolt production in 1997 was the highest on record for four out of six rivers and among the highest in one. However, smolt run timing was late and this has been associated with decreased returns in the past in some rivers. Given there was record or near record smolt production in 1997, even a modest improvement in sea survival could result in increased returns in 1998.

Résumé

Le moratoire imposé à la pêche commerciale du saumon de l'Atlantique en 1992 en était à sa sixième année en 1997. Le moratoire aussi imposé en 1992 à la pêche de la morue du nord, qui devrait avoir fait disparaître les prises accessoires de saumon de la pêche de la morue dans les ZPS 1 à 9, a été maintenu en 1997. Un moratoire a été imposé à la pêche de la morue dans les ZPS 10 à 14 en août 1993 et, à l'exception d'une pêche limitée dans la ZPS 11, il était encore en vigueur en 1997. Plusieurs indices font état d'une augmentation des remontées de petits saumons dans plusieurs rivières en 1997, notamment celles de la côte ouest de la péninsule nord et des côtes nord-est et est, à savoir: une augmentation appréciable des échappées de géniteurs en 1992 qui aurait dû donner lieu à des remontées accrues d'adultes d'un âge modal de saumoneaux de 3+ en 1997; des indices d'une production de saumoneaux record (ou presque) en 1996; une augmentation du taux de survie et de la condition des saumoneaux; une remontée hâtive record des saumoneaux associée à de bonnes remontées antérieures d'adultes; et les conditions thermiques de l'habitat marin au début de 1997 qui comptaient parmi les meilleures jamais notées. Par ailleurs, à l'exception de la baie St. George (ZPS 13), les remontées totales de petits saumons de 1997 étaient inférieures à celles de 1996. Les populations totales de petits saumons de 1997 étaient aussi faibles ou inférieures à celles estimées pour plusieurs années précédant immédiatement le moratoire de la pêche du saumon. À l'exception de l'installation de la rivière Highland (baie St. George), toutes les installations de dénombrement des saumoneaux ont indiqué une baisse de la survie en mer. La plupart des indices font état d'une augmentation de la mortalité en mer qui serait à l'origine de remontées de petits saumons plus faibles que prévues. Les remontées de grands saumons (surtout des madeleineaux ayant déjà frayé) de 1997 ont augmenté à la plupart des installations de dénombrement et, à certains endroits, étaient les plus élevées jamais enregistrées. La production de saumoneaux de 1997 était la plus élevée jamais notée pour quatre des six rivières et comptait parmi les plus élevées dans l'une d'elles. La remontée des saumoneaux a cependant été tardive et cela a déjà été associé à une baisse des remontées dans certaines rivières. Étant donné la production record ou presque record de saumoneaux en 1997, même une légère augmentation de la survie en mer pourrait donner lieu à une augmentation des remontées en 1998.

Introduction

This paper presents the general status of Atlantic salmon stocks of insular Newfoundland, Salmon Fishing Areas (SFAs) 3-14A (Fig. 1) in 1997. Catch and effort data for the recreational fishery and counts at fishways and counting fences (smolts and adults) are examined in relation to historic data and management measures in effect in 1997.

Management measures, past and present

The moratorium on the commercial Atlantic salmon fishery in insular Newfoundland continued in 1997. The implementation of the moratorium in 1992, which was accompanied by a commercial license retirement program, followed a major management plan introduced in 1984 (O'Connell *et al.* 1992a; May 1993; Mullins and Caines MS 1994), elements of which were continued into the quota years of 1990 and 1991 and the moratorium years. These regulations continue a long standing history of management programs designed to prevent stock declines and to allow populations to rebuild (May 1993).

In addition to the closure of the commercial Atlantic salmon fishery in 1992, a moratorium was also placed on the Northern Cod Fishery, which should have eliminated by-catch in cod fishing gear in SFAs 1-9. This moratorium continued in 1997. In August 1993, a moratorium was placed on cod fishing in SFAs 10-14A which remained in effect in 1997, with the exception of a limited fishery in SFA 11.

The number of small salmon (< 63 cm) that could be retained in the recreational fishery in each SFA in 1992 and 1993 was limited by quota. The quota was assigned for each SFA as a whole as opposed to individual river quotas. Only hook-and-release fishing was permitted after the quota was caught in each SFA. Quotas were eliminated in 1994. The seasonal bag limit for the retention of small salmon in insular Newfoundland decreased from eight to six in 1994, three to be caught prior to July 31 and three after that date. Hook-and-release fishing only was permitted after the bag limit of three was reached in each time period. These measures remained in effect in 1995-97. There was a daily bag limit of two fish. As in previous years, the retention of large salmon (≥ 63 cm) was not permitted in insular Newfoundland. The daily maximum number of fish that could be hooked and released was four. Angling ceased for the day when both the retention and hook-and-release limits were reached and ended for the season when six fish were retained.

On a river-specific basis, rivers in SFAs 9 and 10 were opened for hook-and-release fishing two weeks earlier than usual in 1997, after which time retention of catch was permitted until the end of the season, scheduled to end one week early. Colinet River in SFA 9 was opened to hook-and-release fishing for the entire season in 1997, after many years of complete closure. Rivers in SFAs 11 and 12 were opened for hook-and-release fishing one week early followed by retention fishing until the end of the season (scheduled for one week earlier than usual). Several rivers in SFA 13 allowed hook-and-release fishing only for the entire season while others had a period of hook-and-release only followed by retention. Main River (Sop's Arm) in SFA 3 was managed by a quota and Northwest Branch was open to hook-and-release fishing only; also certain areas were closed to all angling. Other rivers managed under quota in 1997 included Conne River in SFA 11, Serpentine

River, Fox Island River, and Adies Lake (upper Humber River) in SFA 13, and Lomond River, Watson's Brook, and Pincent's Brook in SFA 14A. A First People's food fishery was conducted at Conne River in 1997, the first in several years. As in 1996, there was no quota for Exploits River (SFA 4) in 1997. Retention of catch was permitted during June 21-August 16 below Grand Falls followed by hook-and-release fishing only. The main stem of the Exploits River between Grand Falls and Red Indian Lake and all tributaries flowing into Red Indian Lake were open to hook-and-release fishing for the entire season. Retention and hook-and-release dates for tributaries between Grand Falls and Red Indian Lake were the same as for below Grand Falls. The main stem of the Exploits River from Stoney Brook to Grand Falls was closed to all angling for the entire season. Other rivers or parts of rivers closed for the entire season included: Northeast Brook (Trepassey) and Rocky River (SFA 9); Highlands River, Harry's River above Home Pool, streams flowing into Adies Lake, Cook's Brook, and North Brook (Deer Lake) (SFA 13); Western Brook, Ten Mile Feeder (St. Genevieve River), and West River (SFA 14A). Northwest River (Terra Nova National Park) and two nearby rivers, Southwest River and Salmon River, in SFA 5, were closed to all angling in 1997 pending the results of an in-season review. There were fall hook-and-release fisheries (September 2-30) in Gander River (SFA 4) and in Humber River (SFA 13); as a result of projected low returns, the daily limit was reduced from four to two fish.

Most rivers in insular Newfoundland were closed to retention of small salmon in late July when an in-season review projected that overall levels of returns would be substantially lower than expected. Hook-and-release only fishing was permitted (only in the AM for rivers in SFAs 4 and 5) at that point; in early August however, low water levels forced the complete closure of most rivers until the end of the season. Details of openings and closures throughout the season on a river-specific basis in 1997 are provided in Table 1.

For the five-year period immediately preceding the commercial salmon fishery moratorium, the average number of recreational fishery licenses sold in Newfoundland and Labrador was 24493. Maximum license sales prior to the moratorium were recorded in 1988 (26445). By comparison, sales during the moratorium years were 25718 (1992), 26508 (1993), 22596 (1994), 21840 (1995), 26038 (1996), and approximately 20,800 in 1997.

Methods

Catch and effort information and counts of salmon at counting facilities in 1997 were compared to two pre-salmon moratorium means (1984-89 and 1986-91) and to the 1992-96 mean during the moratorium. The 1984-89 mean corresponds to years under major management changes in the commercial fishery in the Newfoundland Region (O'Connell *et al.* 1992a). The commercial fishery in both insular Newfoundland and Labrador in 1990 and 1991 was controlled by a quota in each SFA (O'Connell *et al.* MS 1992b). The mix of management measures in effect during 1984-89 on the one hand and the imposition of commercial quotas in 1990 and 1991 on the other, should be kept in mind when making evaluations based on the 1986-91 mean.

Recreational fishery catch and effort data and fishway and counting fence data were added to that presented in O'Connell *et al.* (MS 1997a). Prior to 1997, recreational fishery data were

compiled as described by Ash and O'Connell (1987a,b) and Mullins and Claytor (1989). Catch statistics for both retained and released small salmon were used in 1992-96. Catch information for released large salmon has been available since 1985 for SFAs 12 and 13. Recreational fishing effort was presented as rod days, defined as any day or part of a day on which an angler fishes.

Prior to 1997, angling data were provided by Department of Fisheries and Oceans (DFO) River Guardians. With a few exceptions, no data were collected by River Guardians in 1997. Angling data for 1997, which at this stage have to be regarded as preliminary, were derived from the License Stub Return System (O'Connell *et al.* MS 1998).

Means and 95% confidence intervals for ratios were calculated according to Cochran (1977).

Results and Discussion

Smolt-to-adult survival

The smolt-to-adult survival of 3.4% for Campbellton River in 1997 (adult year) was by far the lowest recorded to date (Table 2). A survival of 2.9% was observed for Northeast Brook (Trepassey) (SFA 9) in 1997 which was the second lowest recorded, only slightly better than the low observed in 1992, and reversed an increasing trend. Rocky River (SFA 9) recorded a survival of 3.1%, the lowest since 1993 and a decline from the high of 1996. Conne River (SFA 11) also showed a marked decrease in survival (3.4%) in 1997, the worst since 1994 when the lowest level of the time series was recorded. Survival for Western Arm Brook (SFA 14A) in 1997 (3.5%) was the lowest since 1991 and marked a substantial decrease from levels observed in 1995 and 1996.

Fig. 2 shows graphically the trends in sea survival for the rivers mentioned above and also the trend for Highlands River in SFA 13 (from Dempson *et al.* MS 1998). Survival adjusted for commercial exploitation is also shown for Conne River, Northeast Brook (Trepassey), and Western Arm Brook (see Dempson *et al.* MS 1998 for methodology). During moratorium years, estimates of sea survival from smolts to adult small or one-sea-winter (1SW) salmon are believed to represent natural survival rates. Despite major changes to fisheries and corresponding reductions in marine exploitation, sea survival rates were still less than 10%, although this level has been achieved in both Conne River and Western Arm Brook during periods when commercial and by-catch fisheries were in operation. Conne River and Northeast Brook (Trepassey) experienced their lowest survival rates during the period of time that the Newfoundland commercial salmon fishery was closed. Ocean survival for both of these stocks was falling throughout the late 1980s and early 1990s; adjusted sea survival rates only serve to highlight the difference even more.

Recreational fishery and counts at counting facilities

As pointed out earlier, data for 1997 are preliminary and were derived from the License Stub Return System. This method of collecting angling data represents a complete departure from the previous system which was based on information provided by DFO River Guardians. Details on the methodology employed in the Stub Return System and a comparison of stub data with DFO River

Guardian data for 1994-97 are provided in O'Connell *et al.* (MS 1998). Overall, estimates of released small and large salmon from the stub were substantially higher than estimates from River Guardians while the two methods were closer with respect to estimates of small salmon retained. This has to be kept in mind when comparing catches for 1997 with previous years. There is evidence that effort expenditure was under-reported by the stub and hence this information will not be used in the present document. Analyses are currently being carried out to adjust for under-reporting.

Recreational catches of small and large salmon for insular Newfoundland (SFAs 3-14A combined) are presented in Appendix 1a. Data for insular Newfoundland were also rolled into four subdivisions, Northern Peninsula East and Eastern (SFAs 3-8), South (SFAs 9-11), Southwest (SFAs 12-13), and Northern Peninsula West (SFA 14A) and are shown in Appendix 1b-e. Data for each individual SFA are shown in Appendix 1f-q. Catches for all years prior to 1992 represent retained fish only. There was no estimate of released fish during the period of retention of catch in 1992, which could impact on comparisons. For insular Newfoundland, Northern Peninsula East and Eastern, South, and individual SFAs 3-11, 1987 was not included in the means because in that year drought conditions resulted in the closure of most rivers to angling for the greater part of the season.

Insular Newfoundland (SFAs 3-14A)

The total catch of small salmon (retained plus released fish) in the recreational fishery in all of insular Newfoundland in 1997 was comparable to the 1984-89 and 1986-91 means but below the 1992-96 mean (Fig. 3). The number of small salmon retained in 1997 was the lowest in the time series. Comparisons of catch in 1997 with data for 1996 and with means involving 1996 for all of insular Newfoundland is compromised, since such information for SFAs 12 and 13 were largely incomplete in 1996.

Northern Peninsula East and Eastern (SFAs 3-8)

Recreational fishery

The total catch of small salmon in 1997 was below the 1984-89, 1986-91, and 1992-96 means while the number of small salmon retained was the lowest recorded (Fig. 4).

Counting facilities

SFA 3: A counting fence was operated for the second year in Northwest Branch tributary of Main River (Sop's Arm). The fence was not installed until July 8 in 1997 and therefore counts of small (Table 3) and large (Table 4) salmon have to be regarded as partial. The proportion of large salmon in 1997 was twice as high as in 1996 (Table 5).

SFA 4: Counts of small (Table 3) and large (Table 4) salmon are available for fishways located in the Exploits River (Bishop's Falls) and Salmon Brook (tributary of Gander River) and counting fences in Gander River and Campbellton River. Counts of small and large salmon for Exploits River in 1997 decreased from 1996 and the 1992-96 mean but increased over the 1984-89 and 1986-91 means (see also Figs. 5 and 6). The count of small salmon for Campbellton River in

1997 decreased from 1996 and the mean while large salmon decreased from 1996 but increased over the mean. The count of small salmon at the Gander River counting fence in 1997 decreased from 1996 and the 1992-96 mean but remained above the 1986-91 mean; the count of large salmon showed a slight increase over 1996, declined slightly from the 1992-96 mean, but was substantially above the 1986-91 mean. The count of small salmon at the Salmon Brook fishway in 1997 decreased from 1996 and the means; the reverse was true for large salmon.

The proportion of large salmon for Exploits River in 1997 was similar to the high recorded in 1996 and above the means (Table 5 and Fig. 7). The proportion of large salmon for Campbellton River in 1997 was slightly below the high recorded in 1996 and above the mean. At the Gander River counting fence, the proportion of large salmon in 1997 was the highest since 1992 and above the means; the proportion for Salmon Brook was the highest since the start of the commercial fishery moratorium and exceeded the means.

SFA 5: Counts of small (Table 3 and Fig. 8) and large (Table 4 and Fig. 9) salmon are available from fishways in Middle Brook and Terra Nova River (upper and lower) and counting fences in Northwest River, Terra Nova National Park (since 1995), and Indian Bay Brook (operated for the first time in 1997). The count of small salmon at Middle Brook in 1997 decreased from 1996 and the 1992-96 mean but increased over the 1984-89 and 1986-91 means; the count of large salmon was the highest on record. At the lower Terra Nova River fishway, the count of small salmon in 1997 decreased from 1996 and the 1992-96 mean but remained above the 1984-89 and 1986-91 means; the count of large salmon increased over 1996 and the means. The counts of small and large salmon for the lower Terra Nova River in 1993 were incomplete due to fish bypassing the fishway. This was caused by the washout of the diversion dam above the fishway and unusually high water levels. However, since counts in 1993 were the highest ever recorded for small salmon (and highest up to that year for large salmon), they were included in the 1992-96 means. Counts of small and large salmon at the upper Terra Nova River fishway in 1997 decreased from 1996 and the 1992-96 mean but increased over the 1984-89 and 1986-91 means. Counts of small (Table 3) and large (Table 4) salmon for Northwest Brook in 1997 were partial. At the Indian Bay Brook counting fence, 1375 small and 352 large salmon were counted.

The proportions of large salmon for Middle Brook and lower Terra Nova River in 1997 were the highest since the start of the commercial salmon fishery moratorium, exceeding all means (Table 5 and Fig. 10). The proportion for upper Terra Nova River increased over 1996, was similar to the 1992-96 mean and surpassed the 1984-89 and 1986-91 means. The proportion for Northwest River decreased slightly from 1995 and 1996 which in turn were similar. The proportion of large salmon in Indian Bay Brook in 1997 was 0.204.

South (SFAs 9-11)

Recreational fishery

The total catch of small salmon in 1997 decreased from 1996 and the 1984-89 and 1992-96 means but was similar to the 1986-91 mean (Fig. 11). The number of small salmon retained in 1997 decreased from 1996 and the means.

Counting facilities

SFA 9: Counts of small (Table 3 and Fig. 12) and large (Table 4 and Fig. 13) salmon are available from a counting fence in Northeast Brook (Trepassey) and a fishway in Rocky River. Counts of small and large salmon in Northeast Brook (Trepassey) decreased from 1996 and the means. The reverse was true for both small and large salmon for Rocky River.

The proportion of large salmon in Northeast Brook (Trepassey) in 1997 decreased from 1996 (slightly) and the 1984-89 and 1986-91 (slightly) means and was similar to the 1992-96 mean (Table 5 and Fig. 14). The proportion for Rocky River in 1997 was the second highest of the moratorium years and exceeded the means.

SFA 10: Counts of small (Table 3 and Fig. 15) and large (Table 4 and Fig. 16) salmon are provided by a fishway located in Northeast River (Placentia). The count of small salmon in 1997 decreased from 1996 and the 1992-96 mean but increased over the 1984-89 and 1986-91 means. The count of large salmon was the highest on record.

The proportion of large salmon was the highest recorded since the moratorium started, substantially increasing over 1996 and the means (Table 5 and Fig. 17).

SFA 11: Counts of small (Table 3 and Fig. 18) and large (Table 4 and Fig. 19) salmon are available from a counting fence in Conne River and a fishway located in Grand Bank Brook. The count of small salmon in Conne River in 1997 decreased from 1996 and the means (only slightly in the case of the 1992-96 mean). The count of large salmon was similar to 1996, decreased from the 1984-89 and 1986-91 means but increased over the 1992-96 mean. At Grand Bank Brook, the count of small salmon in 1997 decreased from 1996 and the 1984-89 and 1986-91 means but remained similar to the 1992-96 mean. The count of large salmon was the same as or similar to 1996 and the 1992-96 mean and increased over the remaining means.

The proportion of large salmon in Conne River in 1997 was the second highest since the moratorium and increased over the means (Table 5 and Fig. 20). The proportion for Grand Bank Brook was also the second highest of the moratorium years, increased over the 1984-89 and 1986-91 means, but was similar to the 1992-96 mean.

Southwest (SFAs 12-13)

Recreational fishery

The catch information presented in the tables and figures for this subdivision and individual SFAs is incomplete as pointed out above. This plus the cautions associated with stub estimates of catch compared to River Guardian estimates make comparisons rather tenuous. However, aside from 1996, the total catch of small salmon in 1997 was one of the highest on record (Fig. 21). The number of large salmon released was the highest on record. The number of small salmon retained in 1997 was among the lowest.

Counting facilities

SFA 13: Counts of small (Table 3 and Fig. 22) and large (Table 4 and Fig. 23) salmon are available from counting fences in Highlands River and Pinchgut Brook and from population estimates derived from mark-recapture studies in Humber River (Mullins MS 1998). Counts of small and large salmon in Highlands River in 1997 were the highest on record. The count of small salmon in Pinchgut Brook in 1997 was similar to 1996 and the 1992-96 mean while the count of large salmon was the highest recorded. The estimated population size of small salmon for Humber River in 1997 decreased from 1996 and the 1992-96 mean. The estimate for large salmon decreased from 1996 but was above the mean.

The proportion of large salmon in Highlands River in 1997 was the lowest of the moratorium years while the reverse was true for Pinchgut Brook and Humber River (Table 5 and Fig. 24).

Northern Peninsula West (SFA 14A)

Recreational fishery

The total catch of small and large salmon in 1997 decreased from 1996 and the 1992-96 mean but increased over the 1984-89 and 1986-91 means (Fig. 25). The number of small salmon retained was one of the lowest on record, well below 1996 and the means.

Counting facilities

Counts of small (Table 3 and Fig. 26) and large (Table 4 and Fig. 27) salmon are available from fishways located in Lomond River and Torrent River and a counting fence in Western Arm Brook. The count of small salmon in Lomond River in 1997 increased over 1996 and the means. The count of large salmon decreased from 1996, was similar to the 1992-96 mean, and increased over the 1984-89 and 1986-91 means. Counts of small salmon in Torrent River and Western Arm Brook in 1997 decreased from 1996 and the 1992-96 mean but increased over the 1984-89 and 1986-91 means. Counts of large salmon for these two rivers were the highest on record.

Proportions of large salmon in Torrent River and Western Arm Brook in 1997 were the highest on record while that of Lomond was the second highest (Table 5 and Fig. 28).

Total population size

Since the closure of the commercial salmon fishery in 1992, returns of small and large salmon to rivers are assumed to be total population sizes. Total population size prior to the moratorium can be estimated by adjusting for commercial exploitation (Dempson *et al.* MS 1997). Total population sizes of small (Figs. 29-31) and large (Figs. 32-34) salmon for most of the rivers presented above in 1984-97 are available from Dempson *et al.* (MS 1998).

While the decline in returns of small salmon in 1997 was quite dramatic in many cases, declines of $\geq$ 40% from one year to the next are not uncommon in insular Newfoundland. Indeed,

this has occurred on a number of occasions over the past decade. Where this is problematic is when the total population size is considered over the long term. When returns prior to 1992 are adjusted for commercial exploitation, then 1997 is either the lowest (Terra Nova River and Gander River), or among the lowest (Middle Brook, Northeast Brook (Trepassey), Northeast River (Placentia), Conne River, Humber River, and Western Arm Brook) stock sizes recorded or estimated since 1984, or since records have been available (e.g., Gander River).

Whereas many rivers had declining returns of small salmon in 1997, a drop in large salmon returns was the exception rather than the rule. In many cases, large salmon returns (mainly repeat spawning grilse) and the proportions of large salmon in returns increased to the highest levels observed during the moratorium. Where there were decreased returns of both small and large salmon (Exploits River, Campbellton River, Northeast Brook (Trepassey), and Humber River), the proportionate decline from 1996 was similar for both size components.

While much attention has been focused around the substantial declines in 1997 returns, mostly of small salmon, little attention has been directed towards either the lack of response in some south coast stocks during the moratorium years or their continued decline over the long term (Biscay Bay River (no data for this river for 1997), Northeast Brook (Trepassey), and Conne River). Exceptions to this are Rocky River and Northeast River (Placentia). Low returns again in 1997 just continue a persistent problem. It is only because of the apparent increased or above average smolt levels in recent years (Table 2) that stocks have not fallen to even lower levels.

Net marks

The incidence of net-marked fish has been determined for a number of rivers throughout insular Newfoundland since 1994. The results for small and large salmon combined are presented below (from Dempson *et al.* MS 1998):

River	1994	1995	1996	1997
Gander River	15.9	8.9	12.2	15.9
Campbellton River	6.2	5.0	4.3	4.3
Conne River	18.6	7.1	6.2	7.2
Highlands River	0.0	0.7	0.9	0.5
Harry's River			0.6	9.3
Humber River		1.4	2.6	7.6

The incidence in 1997 increased over that of 1996 for all rivers except Campbellton River (remained the same) and Highlands River (decreased). The most dramatic increases occurred in the case of Harry's River. It should be noted that traps were located near the head of tide for all rivers except Harry's River, where fish were examined in Pinchgut Brook, a long distance from the mouth of the river. For rivers other than Harry's River, net marks were likely the result of encounters with legally

set gear for other species and with illegal gear in the marine environment; some net-marks may have occurred in freshwater in Harry's River.

Comments and Conclusions

Management changes in the recreational fishery, specifically the implementation and changing of quotas in SFAs along with mandatory hook-and-release fishing, and changing daily and seasonal bag limits, have seriously compromised the usefulness of angling data in terms of comparability with the past, especially when used as indices of abundance. Adding hook-and-release fish to retained fish, and comparing this total to retained fish for years prior to 1992, assumes the amount of effort expended applies equally to hook-and-release and retained fish. Reports from user groups suggest less effort was directed towards hook-and-release fishing. Also, there have been variable and prolonged closures of rivers to angling over the years due to low water levels and high water temperatures. Angling catches in 1997 were affected by complete closures of most rivers for most of August. Added to this are the confounding elements associated with the derivation of 1997 angling data from the License Stub Return System. In the interpretation of trends and drawing of conclusions with respect to abundance, more weight is placed on information obtained from counting facilities than on recreational fishery data.

The low returns of small salmon to insular Newfoundland rivers in 1997, particularly those on the western side of the Northern Peninsula and along the northeast and east coasts, were unexpected. Just as unexpected were the increased returns to rivers in Bay St. George (SFA 13), as indicated by returns to Highlands River (Table 3) and other Bay St. George rivers (Porter and Bourgeois MS 1998). Several indicators pointed to increased returns of small salmon in 1997 for many rivers:

- There were substantial increases in spawning escapements in 1992, the first year of the moratorium, which were anticipated to result in increased returns of adults with a modal smolt age of 3+ years in 1997 (Table 6)
- Smolt production in 1996 was either the highest on record or among the highest (Table 2)
- Following periods of either declining or stable sea survival, several populations showed evidence of increasing trends (Fig.2) and smolt condition was good (Dempson *et al.* MS 1998)
- Smolt run timing was the earliest on record for most rivers in 1996; usually, early run timing has been associated with good adult returns in some rivers (Dempson *et al.* MS 1998)
- There was evidence that marine thermal habitat conditions in early 1997 were among the best to date (Dempson *et al.* MS 1998).

A workshop was convened in February 1998 in Sydney, Nova Scotia in an attempt to determine possible causes of the low returns in 1997 not only to Newfoundland and Labrador, but also to Atlantic Canada in general and to the United States. Factors examined that could possibly have contributed to low returns were legal and illegal fisheries, marine environmental conditions, predation, disease, parasites, and others such as delayed maturation. Most evidence points to increased mortality at sea, but no single factor could be identified that could explain the cause of the lower than expected returns. In the case of insular Newfoundland, a feature that stood out was the record early entry of smolts into the sea in 1996; there is no suggestion that early smolt migrations occurred anywhere else in Atlantic Canada or in the Unites States 1996. This suggests that while some common factor or factors cannot be ruled out, causes may also be different from river to river. A summary of the findings of the workshop is available in (CSAS 1998) and particulars of the Newfoundland Region analyses presented at the workshop are found in (Dempson *et al.* MS 1998).

It is interesting that smolt production in insular Newfoundland in 1997 was the highest recorded in four out of six rivers and among the highest in one other (Fig. 2), and run timing was either the latest recorded or among the latest (Dempson *et al.* MS 1998). Egg depositions in 1993, the second year of the moratorium, were maintained at levels similar to those of 1992 (Table 6). Considering the turn around in sea survival for the 1996 smolt class, predictions of levels of adult returns for 1998 at this stage are rather tenuous.

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We thank C. E. Bourgeois for providing the counts for Exploits, upper Terra Nova, and Rocky rivers for 1997 and previous years and the smolt data for Rocky River.

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Table 1. Opening and closure dates of the Atlantic salmon recreational fishery for each SFA, and variations by river, 1997.

SFA 1 June 21 - Sept 14

SFA 2 June 21 - Sept 14

SFA 3 June 21 - Sept 1

Main River (Sops Arm), June 21 - July 4, catch and release only on entire river system;
July 5 - September 1, catch and retain on main stem only, Quota of 500 fish.
Main stem will revert to catch and release after quota is taken.
Northwest Branch will be open to catch and release only for the entire season.

River	Close dates	Reason for closure
- All rivers in zone 3 closed to retention (hook and release only)	Aug 15	Low spawner returns

SFA 4 June 21 - Sept 1

- All rivers in zone 4 closed to retention (hook and release only in AM)	July 28	Low spawner returns
- The following rivers closed to angling: Campbellton River Dog Bay River Ragged Harbour River Anchor Brook Deadmans River Windmill River All Tributaries of Gander River	August 1	Low water levels & high water temperatures

- All rivers in Zone 4 (except above rivers which closed due to low water) opened August 20 for all day catch and release.
- The main stem of the Gander River opened for a catch-and-release fall fishery during September 2-30 inclusive. However, due to low spawner returns the daily limit has been reduced to two .

SFA 5 June 21 - Sept 1

- All rivers in zone 5 closed to retention (hook and release only in AM)	July 28	Low spawner returns
- All rivers in zone 5 closed to angling	August 2	Low water levels & high water temperatures

- All rivers in the southern portion of zone 5 (Bonavista Bay), including the main stem of the Terra Nova River (but not its tributaries) opened to all day catch and release on August 20. Northwest, Salmon, and Southwest rivers in the Port Blandford area remained closed.

SFA 6 June 21 - Sept 1

- All rivers in zone 6 closed to retention (hook and release only)	July 28	Low spawner returns
- All rivers in zone 6 closed to angling	August 2	Low water levels & high water temperatures

- All rivers in zone 6 (Trinity Bay) opened August 20 to all day catch and release.

SFA 7 June 21 - Sept 1

- North Arm River, Holyrood closed to all angling	July 14	Low spawner returns
- All rivers in zone 7 closed to retention (hook and release only)	July 28	Low spawner returns
- All rivers in zone 7 closed to angling	August 2	Low water levels & high water temperatures

- All rivers in zone 7 (Conception Bay) opened August 20 to all day catch and release.

SFA 8 June 21 - Sept 1

- All rivers in zone 8 closed to retention (hook and release only)	July 28	Low spawner returns
- All rivers in zone 8 closed to retention	August 2	Low water levels & high water temperatures

- All rivers in zone 8 (Southern Shore) opened August 20 to all day catch and release.

Table 1. Cont'd

SFA 9 June 7 - 20 hook and release; June 21 - Aug 24 retention.		
- All rivers in zone 9 closed to retention (hook and release only)	July 28	Low spawner returns
- All rivers in zone 9 closed to angling	August 2	Low water levels & high water temperatures
SFA 10 June 7 - 20 hook and release; June 21 - Aug 24 retention.		
- The following rivers closed to all angling: Southeast River (Plac.) Northeast River (Plac.) Two sections of Salmonier River	July 23	Low water levels & high water temperatures
- The following rivers closed to all angling: Cape Roger River Nonsuch River Bay de L'Eau River Garnish River Long Harbour River	July 25	Low water levels & high water temperatures
- All rivers in zone 10 closed to retention (hook and release only)	July 28	Low spawner returns
- All rivers in zone 10 closed to angling	August 2	Low water levels & high water temperatures
SFA 11 June 7 - 13 hook and release; June 14 - Aug 24 retention.		
- Conne River: June 7-20 hook and release; June 21 onward retention until 200 fish taken then reverts to hook and release .		
- Conne River closed to all angling	June 27	Low spawner returns
- All rivers in zone 11 closed to retention (hook and release only)	July 28	Low spawner returns
- Grand Bank Brook closed to all angling	August 2	Low water levels & high water temperatures
SFA 12 June 7 - 13 hook and release; June 14 - Aug 24 retention.		
- All rivers in zone 12 closed to retention (hook and release only)	July 28	Low spawner returns
SFA 13 June 1 - Sept 1		
- Fox Island River closed to retention	July 25	Quota 50 fish taken
- Serpentine River closed to retention	July 25	Quota 150 fish taken
- All rivers in zone 13 closed to retention (hook and release only)	July 28	Low spawner returns
- The lower Humber River will be open for a catch-and-release fall fishery during September 2-30 inclusive However, due to low spawner returns the daily limit has been reduced to two .		
SFA 14A June 21 - Sept 1		
- Torrent River opened to retention	July 8	750 fish gone through fishway
- All rivers in zone 14A closed to retention (hook and release only)	August 15	Low spawner returns
SFA 14B June 21 - Sept 14		
- All rivers in zone 14B closed to retention (hook and release only)	August 15	Low spawner returns
- Forteau River closed to all angling	August 15	Low spawner returns
- L'anse au loup Brook closed to all angling	August 15	Low spawner returns

The Department of Fisheries and Oceans announced on August 15, that anglers may no longer retain any salmon caught in non-scheduled waters anywhere in the province (including all of the provinces coastal waters).

Table 2. Atlantic salmon smolt-to-adult survival (back to the river) for Campbellton River (SFA 4), Northeast Brook, Trepassey, and Rocky River (SFA 9), Conne River (SFA 11), Highlands River (SFA 13), and Western Arm Brook (SFA 14A). Repeat spawners are included in counts.

	Campbellton River			Northeast Brook			Rocky River			Conne River[1]			Highlands River			Western Arm Brook		
Year	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%	Smolts	Sm. sal.	%
(i)	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.	year i	year i + 1	Surv.
1971																5735	406	7.1
1972																11905	797	6.7
1973																8484	506	6.0
1974																11854	639	5.4
1975																9600	552	5.8
1976																6232	373	6.0
1977																9899	315	3.2
1978																13071	1578	12.1
1979																8349	465	5.6
1980																15665	492	3.1
1981																13981	467	3.3
1982																12477	1141	9.1
1983																10552	235	2.2
1984																20653	467	2.3
1985																13417	527	3.9
1986				1117	91	8.1										17719	437	2.5
1987				1404	97	6.9				74585	7627	10.2				17029	422	2.5
1988				1692	62	3.7				65692	4968	7.6				15321	455	3.0
1989				1708	71	4.2				73724	5368	7.3				11407	444	3.9
1990				1902	99	5.2	8287	211	2.5	56943	2411	4.2				10563	233	2.2
1991				1911	49	2.6	7732	237	3.1	74645	2523	3.4				13453	480	3.6
1992				1674	79	4.7	7813	292	3.7	68208	2703	4.0				15405	947	6.1
1993	31577	2857	9.0	1849	99	5.4	5115	158	3.1	55765	1533	2.7	9986	145	1.5	13435	954	7.1
1994	41633	3035	7.3	944	80	8.5	9781	385	3.9	60762	3502	5.8	10503	172	1.6	9284	823	8.9
1995	39715	3208	8.1	792	73	9.2	7786	356	4.6	57733 *	4440	7.2	12160	199	1.6	15144	1230	8.1
1996	58369	1975	3.4	1749	50	2.9	14261	435	3.1	94088	3200	3.4	12383	398	3.2	14500	509	3.5
1997	62050			1832			17830			100983			6776			23845		

[1]Includes Native food fishery.

* 5016 removed to Roti Bay.

The 4440 small salmon for Conne River 1996 includes 286 fish from the wild smolt aquaculture experiment.

Table 3. Counts of small salmon from fishways and counting fences in insular Newfoundland 1974-97 by Salmon Fishing Area (SFA). Also shown are means ($\bar{X}$), coefficients of variation (CV), 95% confidence limits (LCL and UCL), and percentage change for 1997 in relation to 1996 and the 1984-89, 1986-91, and 1992-96 means. Partial counts are in parentheses and are not included in statistical calculations. Adusted counts are bold and in italics.

	SFA 3	SFA 4				SFA 5					SFA 9		SFA 10	SFA 11		SFA 13			SFA 14A		
Year	1	2	3	4(a)	4(b)	5	6	7(a)	7(b)	8	9	10	11	12	13	14	15	16	17	18	19
1974		2538		857			(770)		162				223						41	38	382
1975		9218					(1119)		778				(186)						1	191	631
1976		3991							335				294						132	341	520
1977		6148							371										192	789	362
1978		3790		755			1403	810	436				390						117	971	293
1979		6715		(404)			(1350)	569	455				454						195	1984	1578
1980				997			1712	843	420				433			82			301	792	435
1981		(8114)		2459			2414	1115	619				334			127			110	2101	451
1982		(7605)		1425			1281	963	625				86			100			275	2112	394
1983				978			1195	1210	853				233						220	2007	1141
1984		17219		1081			1379	1233	904		89		419						440	1805	120
1985		16652		1663			904	1557	960		124		384						190	1553	***416***
1986		9697		1064			1036	1051	726		158		725	211	7515				354	2815	***525***
1987		9014		493			914	974	570		91	80	325	(155)	9687				355	2505	378
1988		8974		1562			772	1737	795		97	313	543	149	7118				437	2075	***251***
1989		7192		596	7743		496	1138	668		62	168	706	175	4469					1369	***455***
1990		6629		***345***	7520		745	1149	(410)		71	401	551	208	4321			12216		2296	***444***
1991		5245		245	6445		562	873	(311)		99	211	353	(46)	2086			5724		1441	233
1992		12538		1168	***18179***		1182	1443	886		49	237	921	101	1973		222	17571	435	2347	480
1993		21319	4001	1560	25905		1959	(2713)	962		79	292	847	(182)	2355	137	576	18477	526	4009	947
1994		16168	2857	968	18080		1513	1571	1179		99	158	677		1533	145	562	7995	701	3592	954
1995		15691	3035	1600	22002		1139	2258	1298	442	80	385	663		3498	172	753	27898	1003	5800	823
1996	579	29726	3208	948	23665		1751	2005	1285	592	73	356	1225	221	4436	199	601	30445	601	6923	1230
1997	(338)	13552	1975	465	10476	1375	1221	1577	979	(408)	50	435	641	164	2678	398	613	14004	783	3659	509
$\bar{X}$ 1984-89		11458		1077			917	1282	771		104	187	517	178	7197				355	2020	358
CV		38		45			32	24	19		32	63	33	17	30				29	28	41
95% UCL		16000		1580			1223	1598	924		138	479	695	256	10603				481	2606	513
95% LCL		6916		573			610	965	617		69	-105	339	101	3791				229	1434	202
N		6		6			6	6	6		6	3	6	3	4				5	6	6
$\bar{X}$ 1986-91		7792		718	7236		754	1154	690		96	235	534	186	5886				382	2084	381
CV		22		70	10		27	26	14		35	53	32	16	47				12	28	31
95% UCL		9593		1244	8960		969	1473	841		132	390	711	233	8741				500	2692	504
95% LCL		5991		191	5512		540	835	538		61	79	356	139	2991				264	1475	258
N		6		6	3		6	6	4		6	5	6	4	6				3	6	6
$\bar{X}$ 1992-96		19088	3275	1248	21566		1509	1998	1122		76	286	867	161	2759	163	543	20477	653	4534	887
CV		35	15	25	16		24	26	17		24	32	26	53	43	17	36	44	33	40	31
95% UCL		27442	4078	1640	25824		1950	2640	1356		98	399	1151	923	4233	208	785	31628	925	6794	1224
95% LCL		10735	2472	857	17309		1068	1356	888		54	172	583	-601	1285	118	301	9327	382	2274	549
N		5	4	5	5		5	5	5		5	5	5	2	5	4	5	5	5	5	5
% change, 1997 vs:																					
1996	-42	-54	-38	-51	-56		-30	-21	-24		-32	22	-48	-28	-40	100	2	-54	30	-47	-59
$\bar{X}$ 1984-89		18		-57			33	23	27		-52	133	24	-8	-63				120	81	42
$\bar{X}$ 1986-91		74		-35	45		62	37	42		-48	85	20	-12	-54				105	76	34
$\bar{X}$ 1992-96		-29	-40	-63	-51		-19	-21	-13		-34	52	-26	2	-3	144	13	-32	20	-19	-43

1. Main River (Sop's Arm) counting fence
2. Exploits River
   Bishop's Falls fishway
3. Campbellton River counting fence
4. Gander River
   (a) Salmon Brook fishway
   (b) Gander River counting fence
5. Indian Bay Brook counting fence
6. Middle Brook fishway
7. Terra Nova River
   (a) Lower fishway
   (b) Upper fishway
8. Northwest River (T N. Nat. Park) counting fence
9. Northeast Brook (Trepassey) counting fence
10. Rocky River fishway
11. Northeast River (Placentia) fishway
12. Grand Bank Brook fishway
13. Conne River counting fence
14. Highlands River counting fince
15. Pinchgut Brook counting fence
16. Humber River mark-recapture
17. Lomond River fishway
18. Torrent River fishway
19. Western Arm Brook counting fence

Table 4. Counts of large salmon from fishways and counting fences in insular Newfoundland 1974-97 by Salmon Fishing Area (SFA). Also shown are means ($\bar{X}$), coefficients of variation (CV), 95% confidence limits (LCL and UCL) and percentage change for 1997 in relation to 1996 and the 1984-89, 1986-91, and 1992-96 means. Partial counts are in parentheses and are not included in statistical calculations. Adjusted counts are bold and in italics.

	SFA 3	SFA 4				SFA 5					SFA 9		SFA 10	SFA 11		SFA 13			SFA 14A		
Year	1	2	3	4(a)	4(b)	5	6	7(a)	7(b)	8	9	10	11	12	13	14	15	16	17	18	19
1974		411		9			(77)		121				9						33	3	4
1975		1439					(9)		52				(36)						0	25	1
1976		460							37				56						11	47	0
1977		581							262										11	33	3
1978		303		52			16	20	89				32						12	21	1
1979		277		(6)			(54)	170	30				37						1	39	0
1980				15			91	39	17				34			55			19	63	3
1981		(1695)		33			39	90	28				62			29			50	97	1
1982		(181)		18			20	19	8				36			56			16	523	3
1983				12			75	57	76				22						7	442	4
1984		529		38			57	107	98		33		44						47	288	0
1985		183		26			27	112	60		41		0						14	30	1
1986		355		12			15	140	58		30		39	4	397				32	92	0
1987		310		9			19	56	38		30	1	16	(2)	498				11	68	1
1988		147		24			14	206	45		19	6	11	2	418				21	44	1
1989		89		24	473		19	142	51		18	9	15	7	319					60	0
1990		122		***8***	508		13	144	(34)		9	17	25	15	361			855		82	0
1991		99		2	670		14	114	(26)		13	16	8	(7)	87			401		71	1
1992		314		101	***4162***		43	270	224		10	46	46	35	154		5	2945	80	169	8
1993		627	145	87	1734		87	(470)	173		17	72	65	(6)	98	78	43	636	34	222	8
1994		916	191	83	1072		90	242	172		15	19	70		100	148	47	1030	50	331	31
1995		941	218	125	1121		168	634	260	135	12	39	74		107	120	28	2064	95	611	33
1996	49	2053	560	112	1753		161	464	185	181	15	45	123	33	179	142	38	2679	93	507	50
1997	(65)	886	321	119	1883	352	262	527	173	(115)	9	89	185	33	182	157	68	2444	72	666	55
$\bar{X}$ 1984-89		269		22			25	127	58		29	5	21	4	408				25	97	1
CV		60		47			65	39	36		31	76	82	58	18				59	99	110
95% UCL		439		33			42	179	80		38	15	39	11	525				43	198	1
95% LCL		99		11			8	75	36		19	-5	3	-2	291				7	-4	-0
N		6		6			6	6	6		6	3	6	3	4				5	6	6
$\bar{X}$ 1986-91		187		13	550		16	134	48		20	10	19	7	347				21	70	1
CV		62		68	19		17	36	18		44	69	60	82	41				49	24	110
95% UCL		308		23	811		18	185	62		29	18	31	16	494				47	87	1
95% LCL		66		4	289		13	83	34		11	1	7	-2	199				-5	52	-0
N		6		6	3		6	6	4		6	5	6	4	6				3	6	6
$\bar{X}$ 1992-96		970	279	102	1968		110	416	203		14	44	76	34	128	122	32	1871	70	368	26
CV		68	68	17	64		49	39	19		20	43	38	4	29	26	52	54	39	51	69
95% UCL		1785	581	123	3543		176	617	250		17	68	111	47	173	172	53	3124	104	601	48
95% LCL		155	-24	80	394		44	215	155		10	21	40	21	82	72	11	618	37	135	4
N		5	4	5	5		5	5	5		5	5	5	2	5	4	5	5	5	5	5
% change, 1997 vs:																					
1996	33	-57	-43	6	7		63	14	-6		-40	98	50	0	2	11	79	-9	-23	31	10
$\bar{X}$ 1984-89		230		437			941	314	197		-68	1569	788	662	-55				188	587	10900
$\bar{X}$ 1986-91		374		804	242		1572	294	260		-55	808	874	371	-48				238	858	10900
$\bar{X}$ 1992-96		-9	15	17	-4		139	27	-15		-35	101	145	-3	43	29	111	31	2	81	112

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15. Pinchgut Brook counting fence
16. Humber River mark-recapture
17. Lomond River fishway
18. Torrent River fishway
19. Western Arm Brook counting fence

Table 5. Proportions of large salmon at counting facilities in Newfoundland during 1992-97 and mean proportions for 1984-89, 1986-91, and 1992-96.

	Proportion large salmon								
Counting facility	1992	1993	1994	1995	1996	1997	$\bar{X}$ 84-89	$\bar{X}$ 86-91	$\bar{X}$ 92-96
SFA 3									
Main River (Sop's Arm)					0.078	0.161			
SFA 4									
Exploits River (Bishop's Falls)	0.024	0.029	0.054	0.057	0.065	0.061	0.023	0.023	0.048
Campbellton River		0.035	0.063	0.067	0.149	0.140			0.078
Gander River (Salmon Bk.)	0.080	0.053	0.079	0.072	0.106	0.204	0.020	0.018	0.075
Gander River (counting fence)	0.186	0.063	0.056	0.048	0.069	0.152		0.071	0.084
SFA 5									
Indian Bay Brook						0.204			
Middle Brook	0.035	0.043	0.056	0.129	0.084	0.177	0.027	0.020	0.068
Terra Nova River (Lower)	0.158	0.148	0.133	0.219	0.188	0.250	0.090	0.104	0.172
Terra Nova River (Upper)	0.202	0.152	0.127	0.167	0.126	0.150	0.070	0.065	0.153
Northwest River (Terra Nova Nat. Park)				0.234	0.234	0.214			
SFA 9									
Northeast Brook (Trepassey)	0.169	0.177	0.132	0.130	0.170	0.153	0.216	0.171	0.154
Rocky River	0.163	0.198	0.107	0.092	0.112	0.170	0.028	0.040	0.134
SFA 10									
Northeast River (Placentia)	0.048	0.071	0.094	0.100	0.091	0.224	0.039	0.034	0.080
SFA 11									
Grand Bank Brook	0.257	0.032			0.130	0.168	0.024	0.036	0.174
Conne River	0.072	0.040	0.061	0.030	0.039	0.064	0.054	0.056	0.044
SFA 13									
Highlands River		0.363	0.505	0.412	0.416	0.283			0.428
Pinchgut Brook	0.022	0.069	0.077	0.036	0.059	0.099			0.056
Humber River	0.144	0.033	0.114	0.069	0.081	0.149			0.084
SFA 14A									
Lomond River	0.155	0.061	0.067	0.087	0.134	0.084	0.066	0.053	0.097
Torrent River	0.067	0.052	0.084	0.095	0.068	0.154	0.046	0.032	0.075
Western Arm Brook	0.016	0.008	0.031	0.039	0.039	0.098	0.001	0.001	0.028

Table 6. Newfoundland Region summary of the conservation egg requirement attained for various rivers during the five-year period prior to the commercial salmon fishing moratorium (1987-91) and the six years during the moratorium (1992-97).

		Year										
SFA	River	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
4	Exploits River											
	-Lower	65	61	48	47	31	101	159	90	95	166	70
	-Middle	9	12	14	12	15	20	23	26	24	42	19
	-Upper	97	125	119	88	0.3	2	6	7	12	26	9
	Campbellton River							311	239	279	304	201
	Gander River			44	38	36	118	128	91	95	124	63
5	Middle Brook	90	55	49	74	51	148	238	174	114	250	196
	Terra Nova River	14	28	19	19	15	28	53	26	45	36	32
	Northwest River									40	55	36-46
9	Biscay Bay River	119	117	87	122	38	141	97	143	77	117	-
	Rocky River	22	30	17	40	22	28	34	25	56	34	56
10	Northeast River	166	247	302	269	175	555	527	434	422	736	486
11	Conne River*	214	159	103	112	51	51	61	40	81	112	70
	Little River**	51	30	61	105	47	44	80	37	56	288	202
13	Harrys River						12	37	46	48	52	50
	Pinchgut (tributary of Harrys)						36	117	145	150	130	
	Highlands River							47	86	68	78	101
	Humber River				60	27	117	96	40	128	186	115
	Flat Bay Brook						18	14	19	45	85	87
	Crabbes Brook						34	13	41	-	68	95
	Middle Barachois Brook						53	48	74	-	81	148
	Robinsons River						57	23	65	-	67	91
14A	Lomond River	56	70	61	62	64	121	118	142	187	143	161
	Torrent River	201	266	225	221	176	313	538	530	1033	1279	797
	Western Arm Brook	103	67	142	114	68	151	288	292	286	415	200

*Conne River is evaluated against a Management Target which is higher than the corresponding conservation egg requirement.

**Colonization program at Little River. Eggs removed from most adult returns, incubated, and fry subsequently stocked into the system. Conservation requirement achieved includes natural egg deposition and fry stocking egg equivalents.

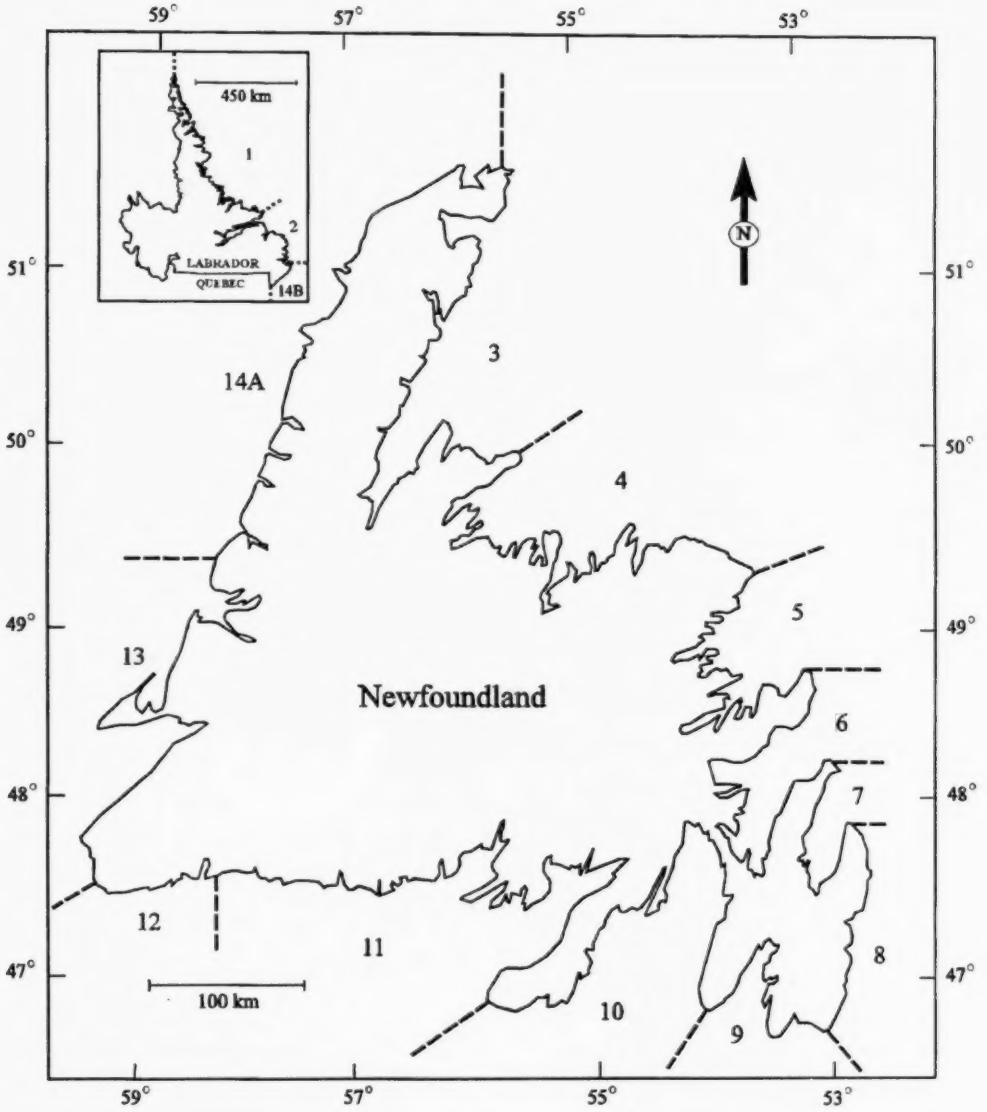

Fig. 1. Map showing the 14 Salmon Fishing Areas of the Newfoundland Region.

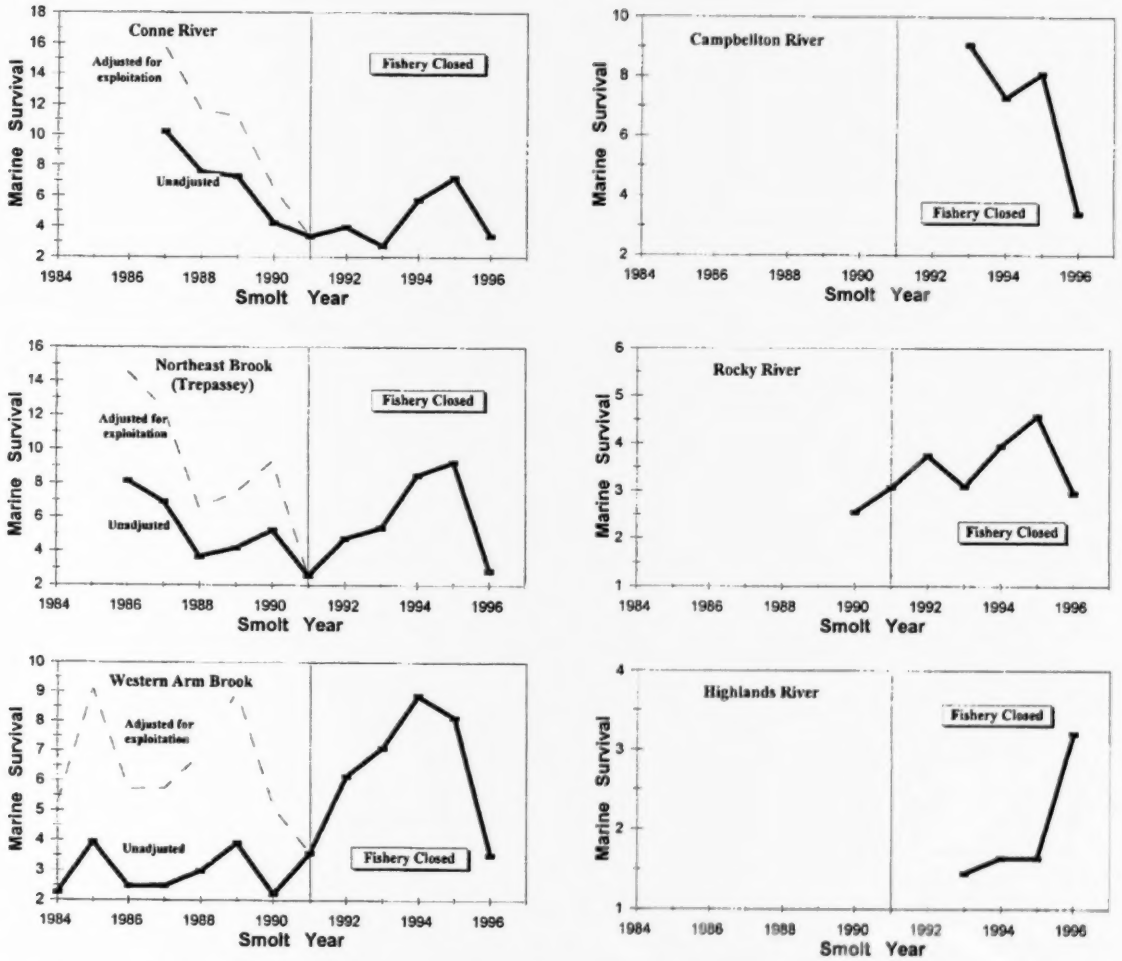

Fig. 2. Estimates of marine survival from smolts in year i to adult small salmon in year i+1. Dashed line represents marine survival adjusted for average marine exploitation rate (from Dempson *et al.* MS 1998).

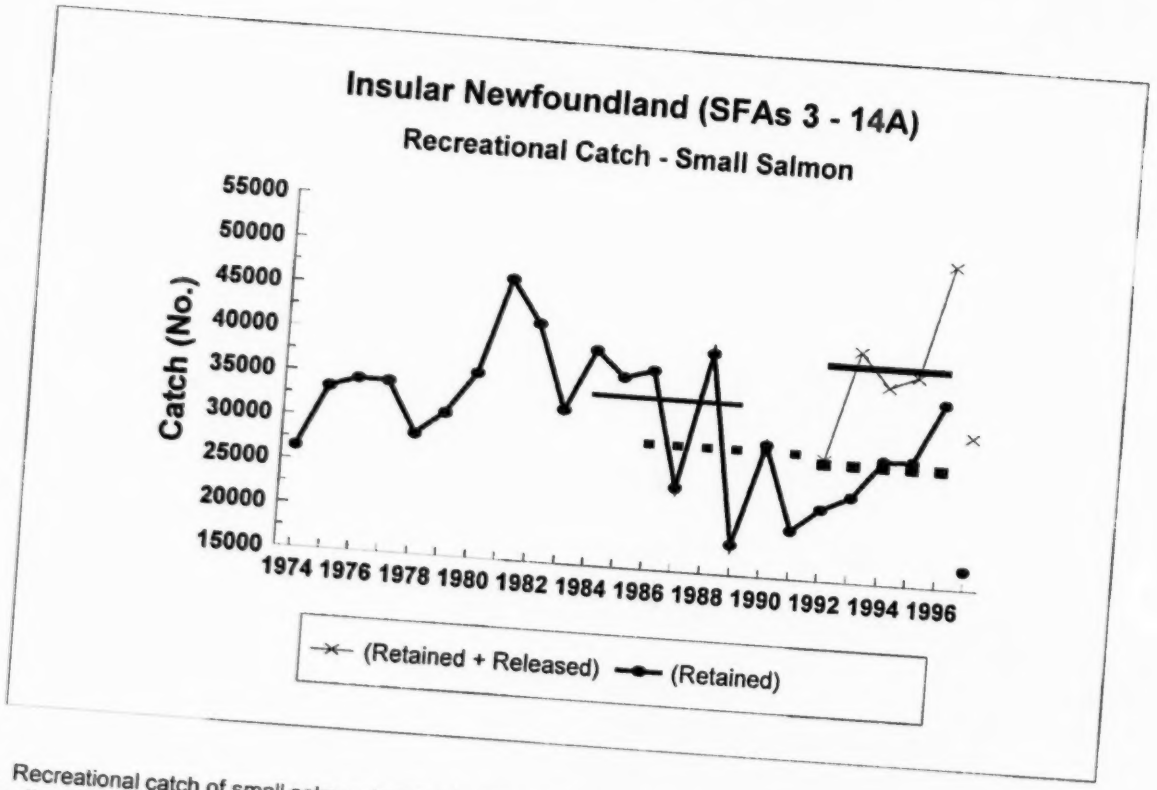

Fig. 3. Recreational catch of small salmon (retained, 1974-97; retained plus released, 1992-97), for Insular Newfoundland (SFAs 3-14A). The thin solid horizontal line represents the 1984-89 mean, the thin broken horizontal line the 1986-91 mean, the thick solid line the 1992-96 mean (retained + released) and the thick broken line the 1992-96 mean (retained only). Catch totals for 1996 are incomplete because data were unavailable for several rivers in SFAs 12 and 13. The 1997 data, obtained from the licence stub return, are preliminary and are represented by single points which are not continuous with the lines.

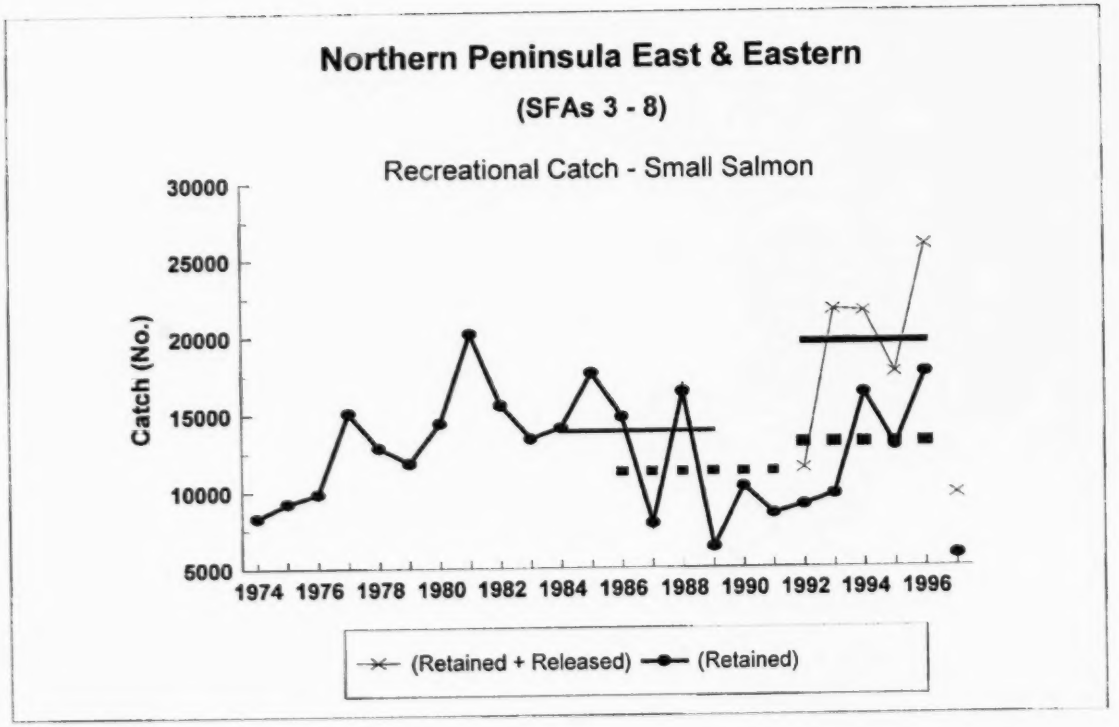

Fig. 4. Recreational catch of small salmon (retained, 1974-97; retained plus releasesd, 1992-97), for Northern Peninsula East and Eastern (SFAs 3-8). The thin solid horizontal line represents the 1984-89 mean, the thin broken line the 1986-91 mean, the thick solid line the 1992-96 mean (retained + released), and the thick broken line the 1992-96 mean (retained only). The 1997 data, obtained from the licence stub return, are preliminary and are represented by single points which are not continuous with the lines.

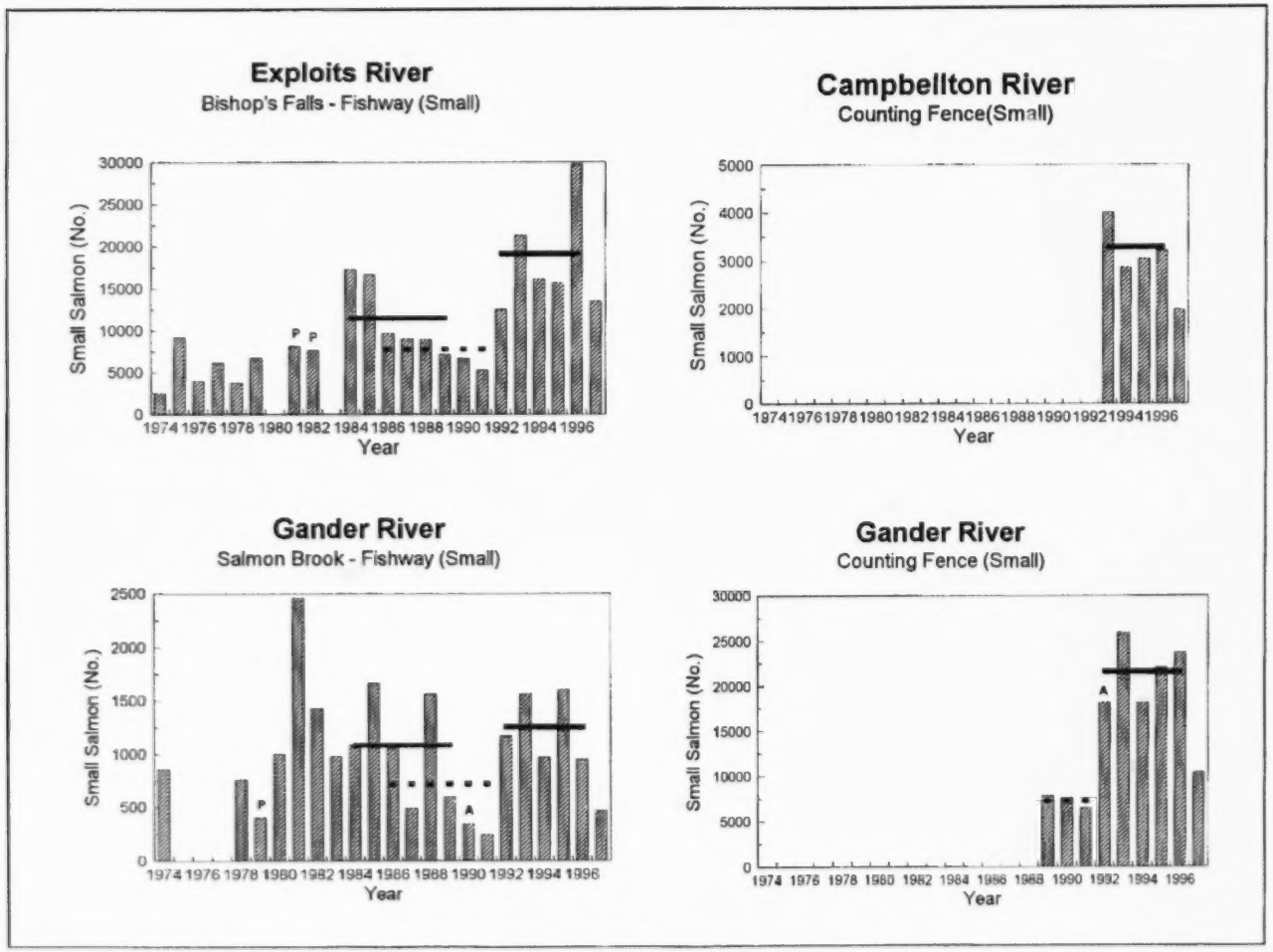

Fig. 5. Counts of small salmon at the Bishop's Falls fishway (main stem of the Exploits River), the Campbellton River counting fence and at the Gander River counting fence and the fishway located in the Salmon Brook tributary, SFA 4. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-96 mean. A = adjusted count and P = partial count, not included in the means.

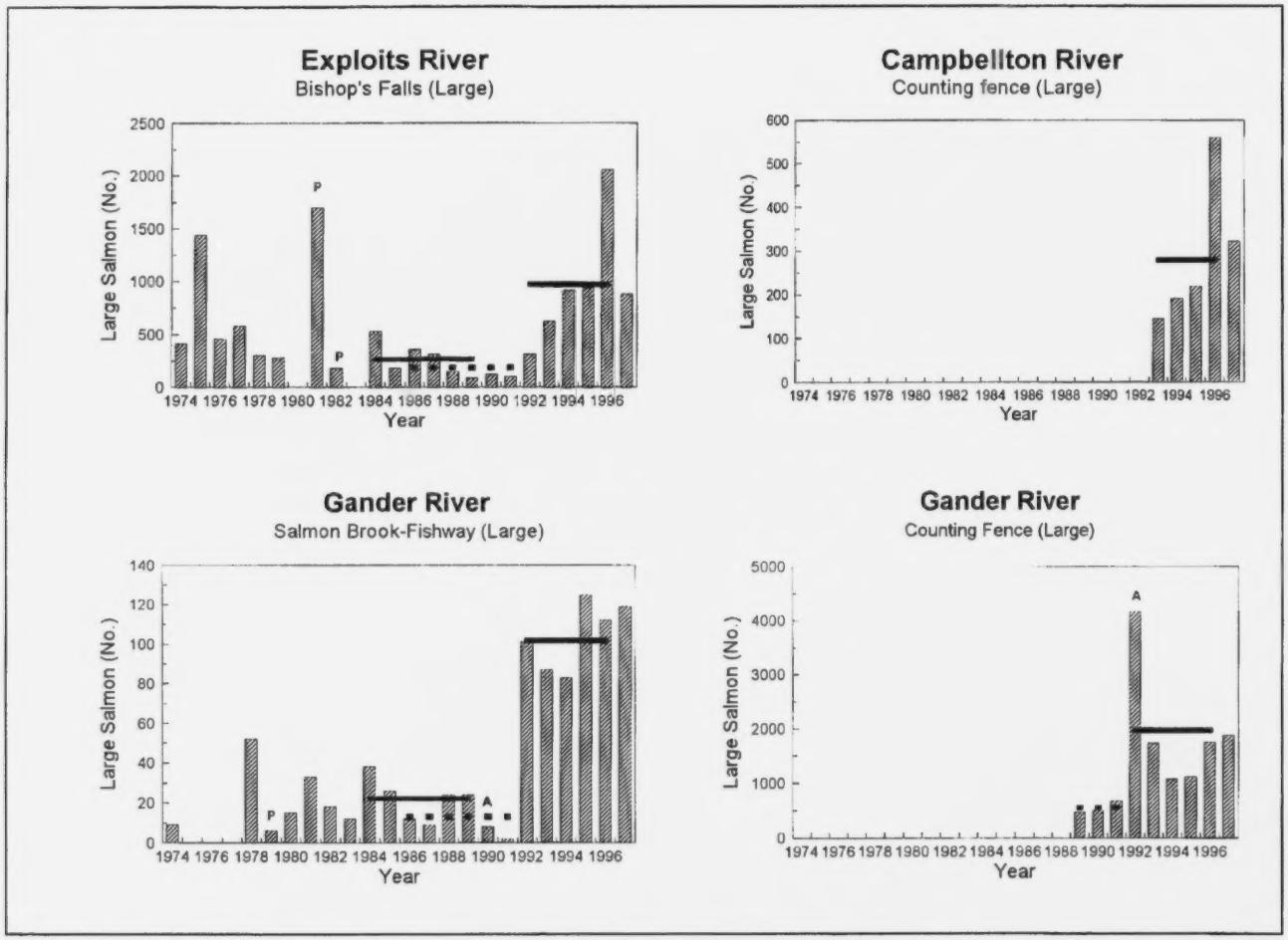

Fig. 6. Counts of large salmon at the Bishop's Falls fishway (main stem of the Exploits River), the Campbellton River counting fence and at the Gander River counting fence and the fishway located in the Salmon Brook tributary, SFA 4. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-96 mean. A = adjusted count and P = partial count, not included in the means.

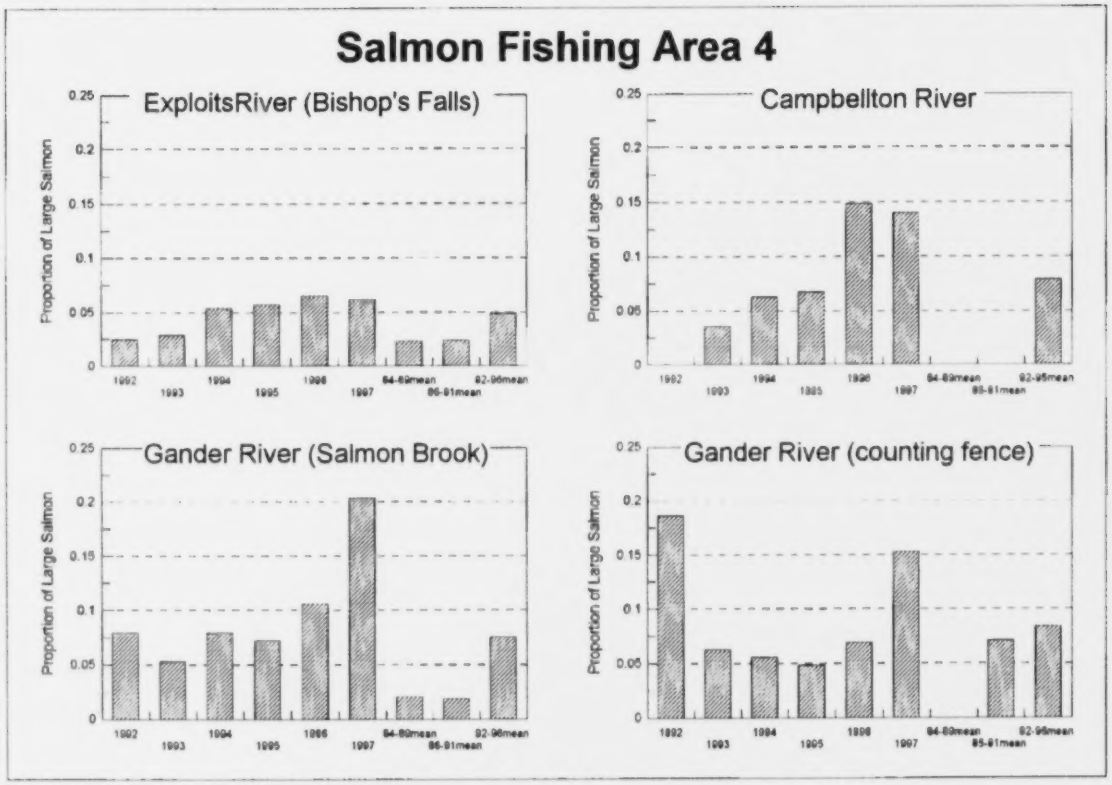

Fig. 7. Proportion of large salmon for Exploits River (Bishop's Falls), Campbellton River, Gander River counting fence and the fishway on the Salmon Brook tributary, SFA 4, 1992-97, and the 1984-89, 1986-91 and 1992-96 means.

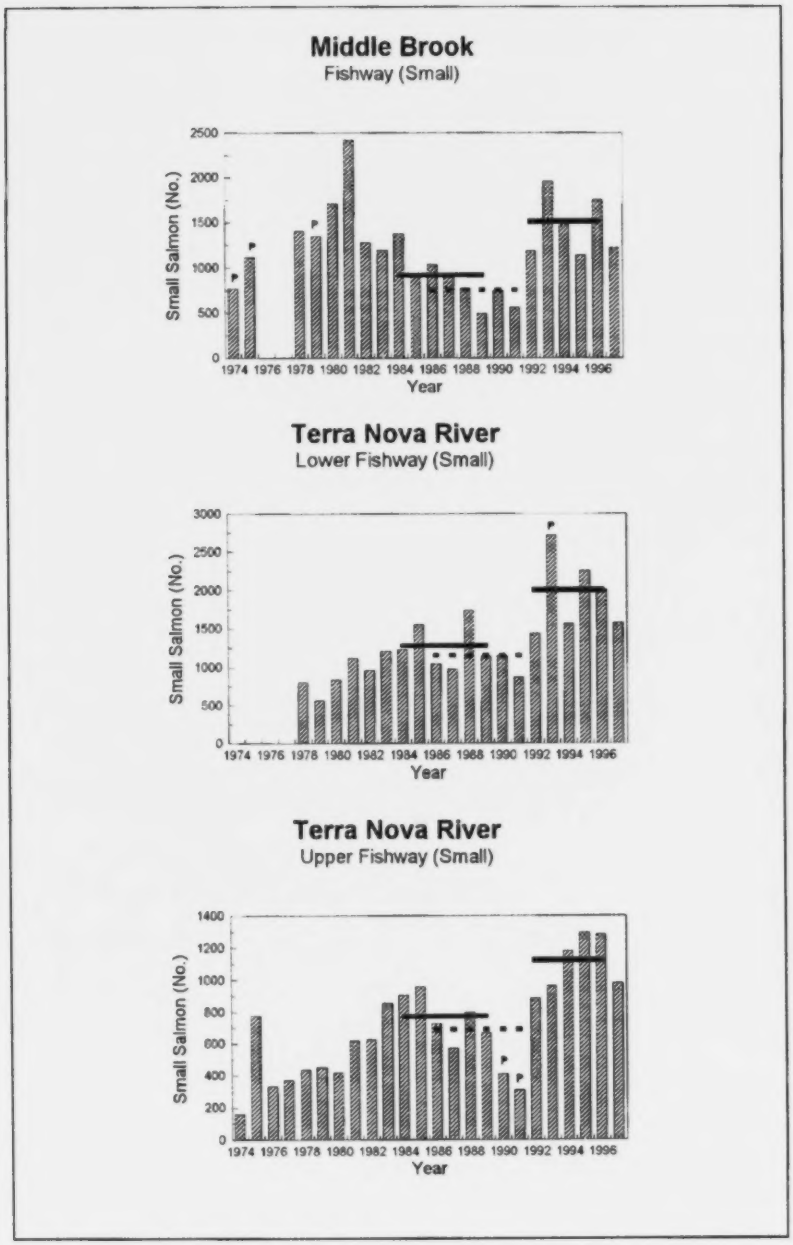

Fig. 8. Counts of small salmon at the Middle Brook fishway, and at the lower and upper fishways in Terra Nova River, SFA 5. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-96 mean. P = partial count, not included in the means.

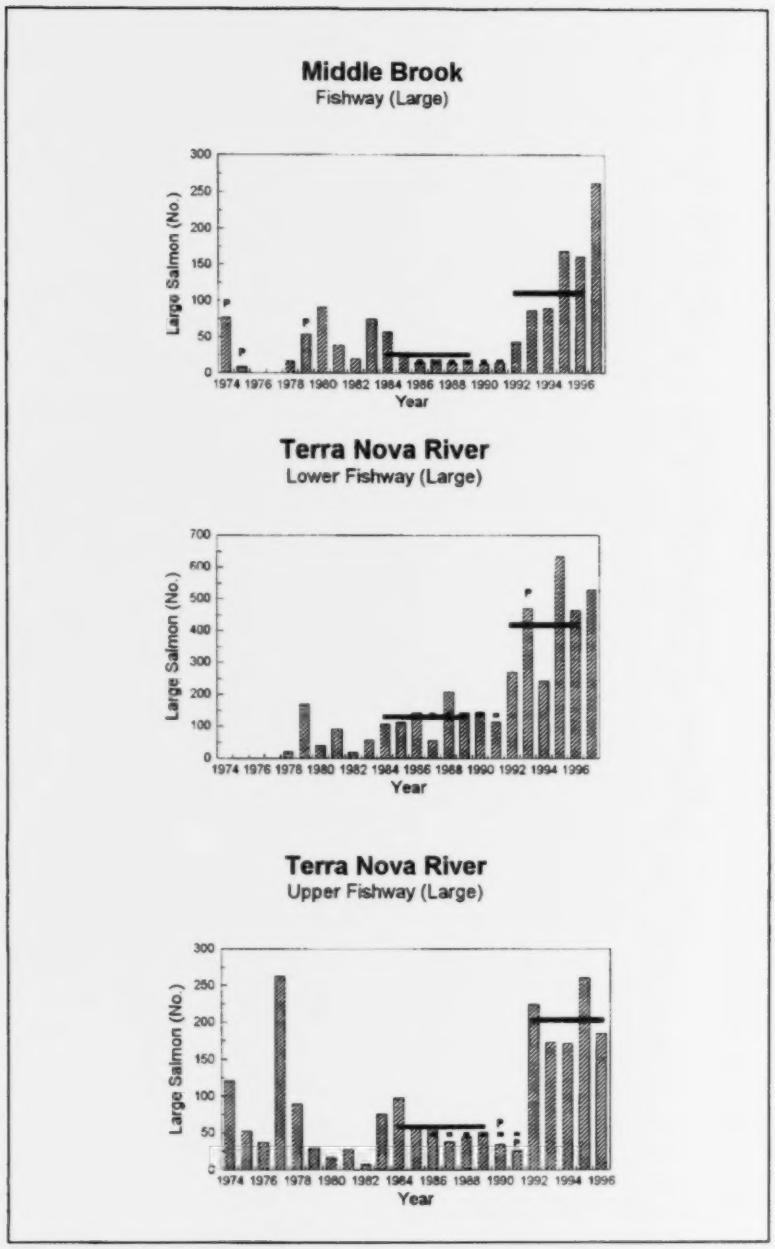

Fig. 9. Counts of large salmon at the Middle Brook fishway, and at the lower and upper fishways in Terra Nova River, SFA 5. The thin horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-96 mean. P = partial count, not included in the means.

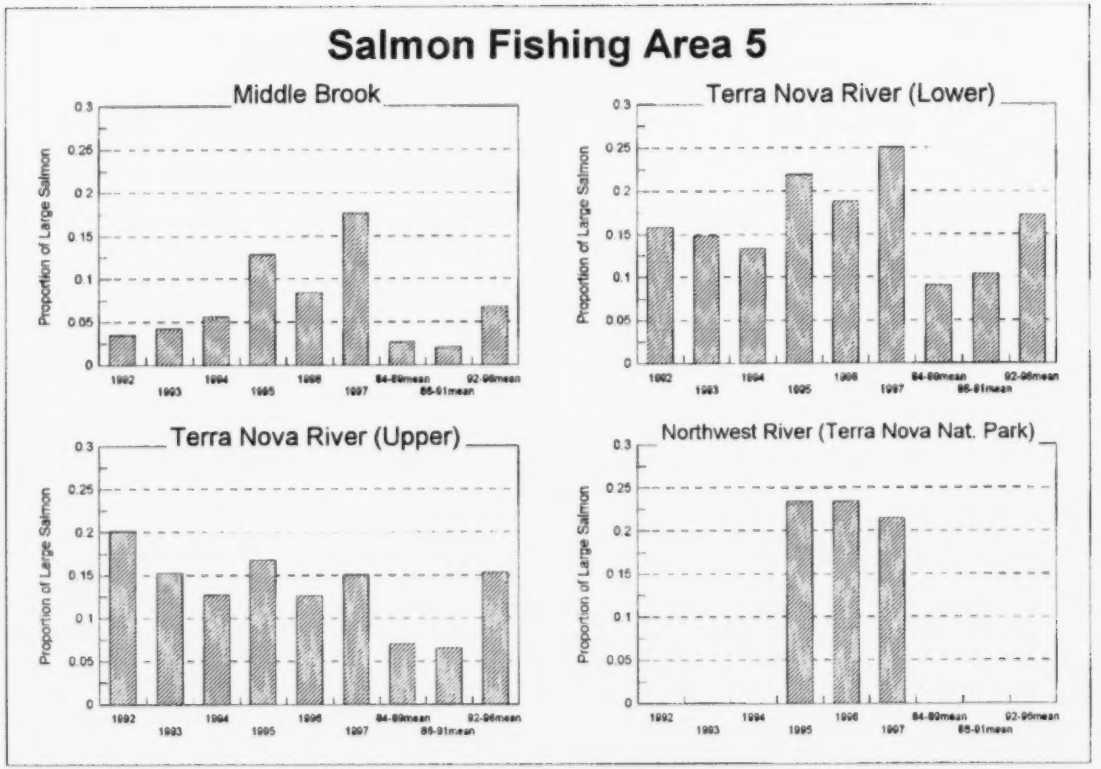

Fig. 10. Proportion of large salmon for Middle Brook, the upper and lower Terra Nova River, and Northwest River (Terra Nova Nat. Park), SFA 5, 1992-97, and the 1984-89, 1986-91, and 1992-96 means.

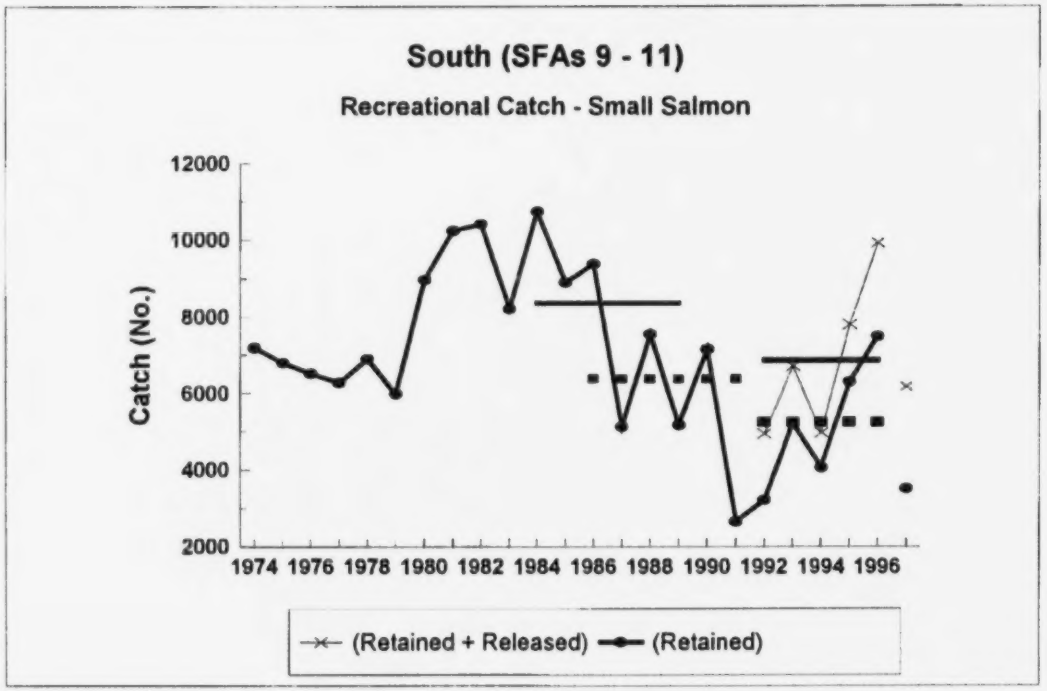

Fig. 11. Recreational catch of small salmon (retained, 1974-97; retained plus releasesd, 1992-97), for South (SFAs 9-11). The thin solid horizontal line represents the 1984-89 mean, the thin broken line the 1986-91 mean, the thick solid line the 1992-96 mean (retained + released), and the thick broken line the 1992-96 mean (retained only). The 1997 data, obtained from the licence stub, are preliminary and are represented by single points which are not continuous with the lines.

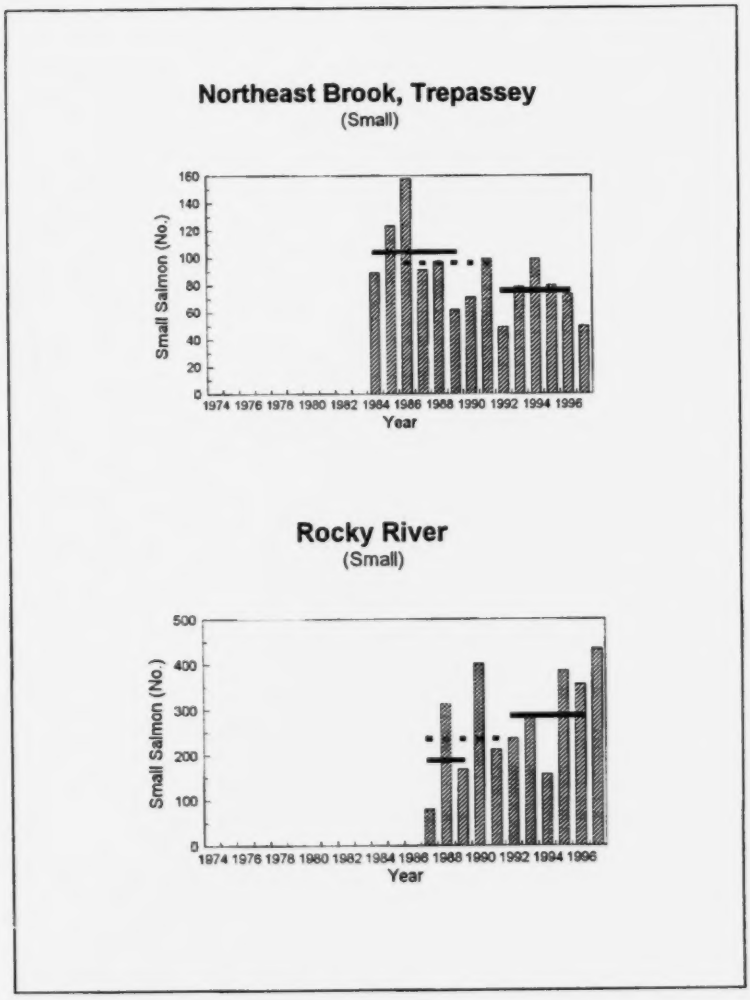

Fig. 12. Counts of small salmon at the counting fence in Northeast Brook (Trepassey) and at the fishway in Rocky River, SFA 9. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-96 mean.

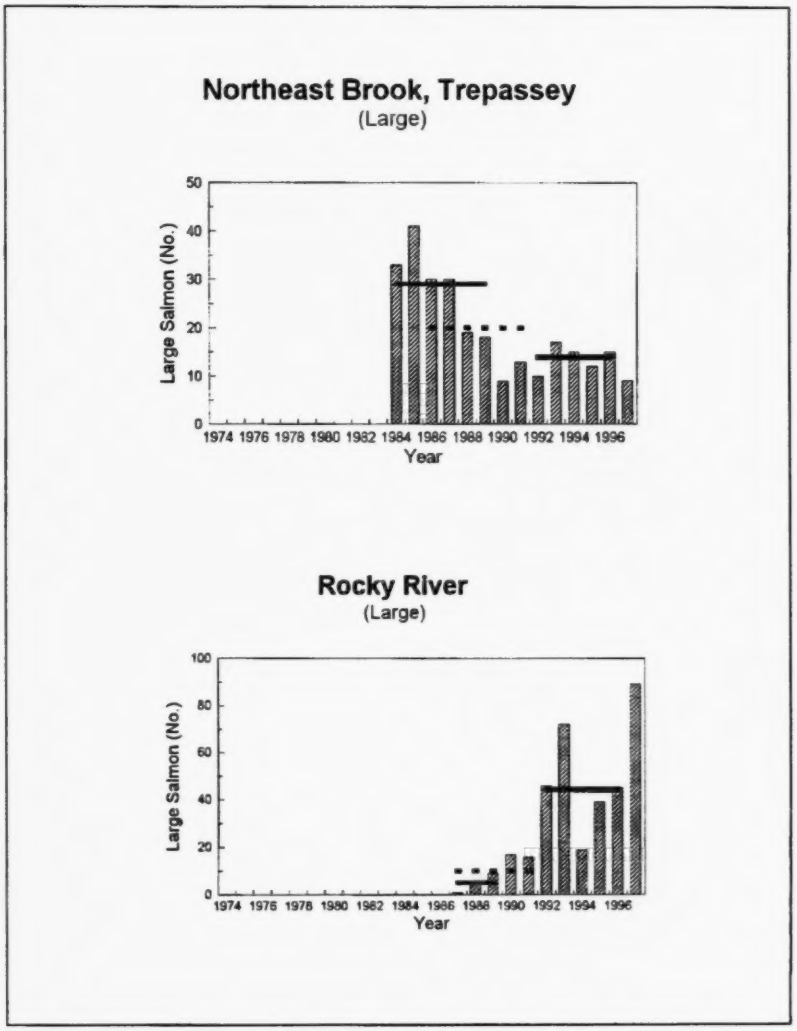

Fig. 13. Counts of large salmon at the counting fence in Northeast Brook (Trepassey), and at the fishway in Rocky River, SFA 9. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-96 mean.

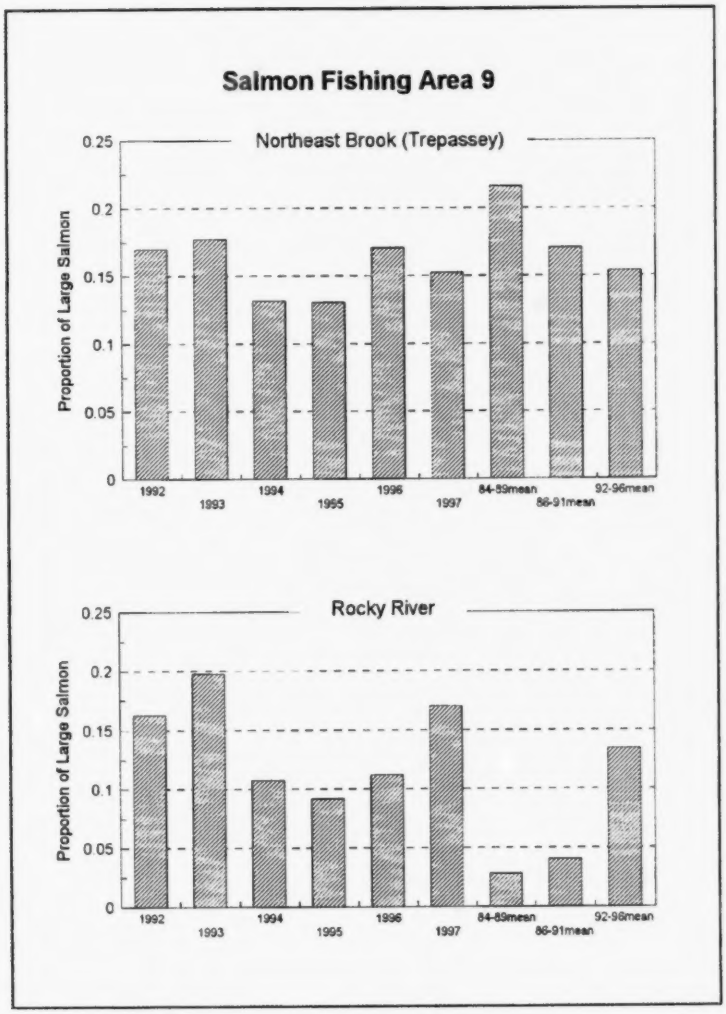

Fig. 14. Proportion of large salmon for Northeast Brook (Trepassey), and Rocky River, SFA 9, 1992-97, and the 1984-89, 1986-91 and 1992-96 means.

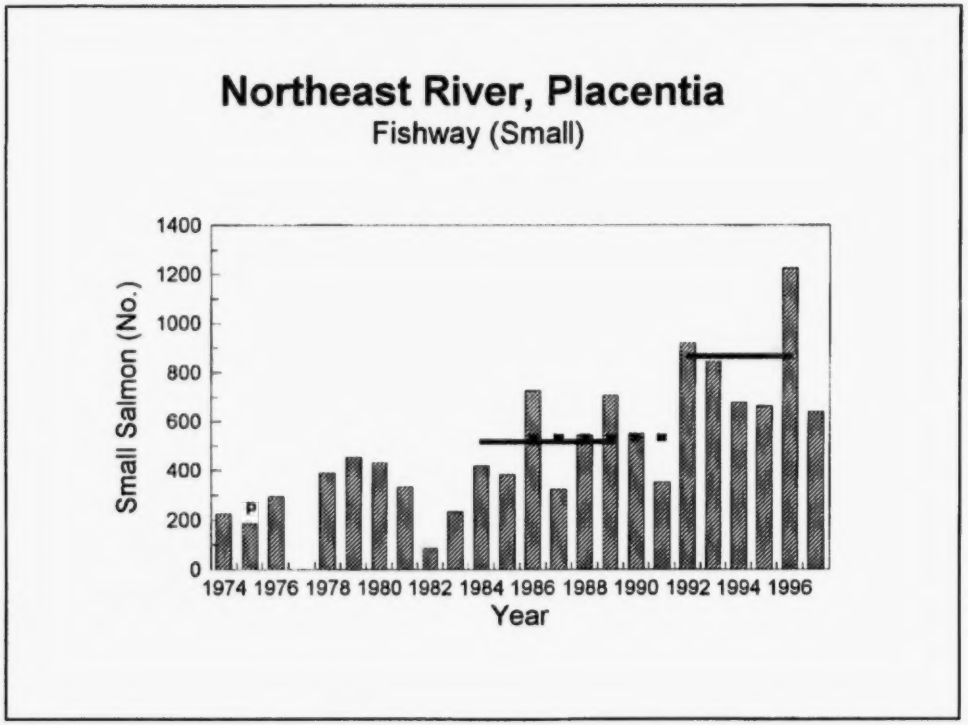

Fig. 15. Counts of small salmon at the Northeast River (Placentia) fishway, SFA 10. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-96 mean. P = partial count.

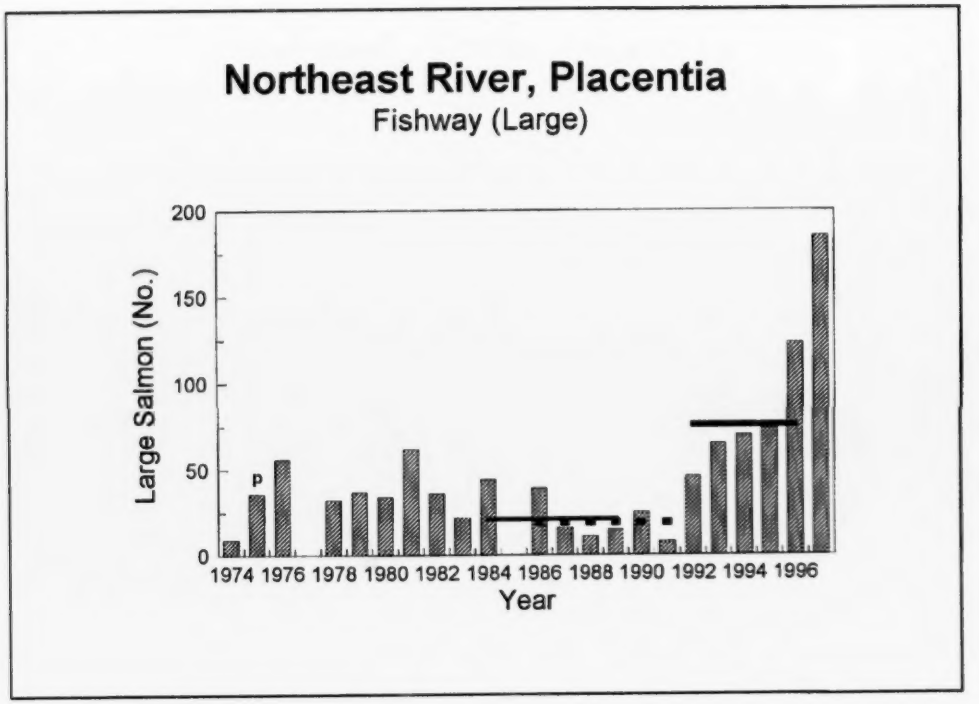

Fig. 16. Counts of large salmon at the Northeast River (Placentia) fishway, SFA 10. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean and the thick solid line the 1992-96 mean. P = partial count.

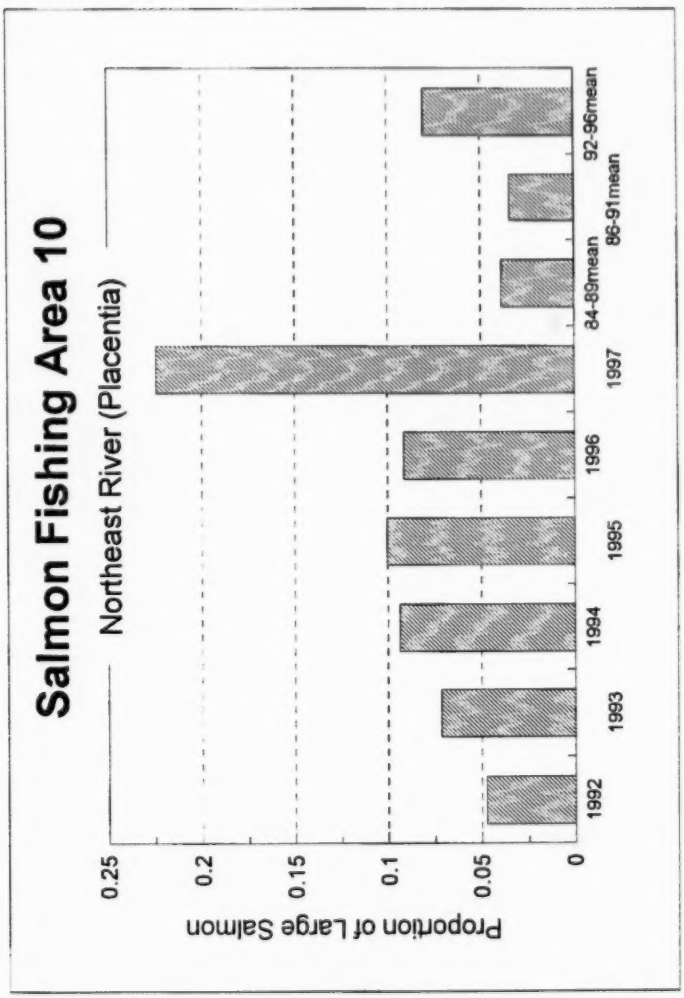

Fig. 17. Proportion of large salmon for Northeast River (Placentia), SFA 10, 1992-97 and the 1984-89, 1986-91, and 1992-96 means.

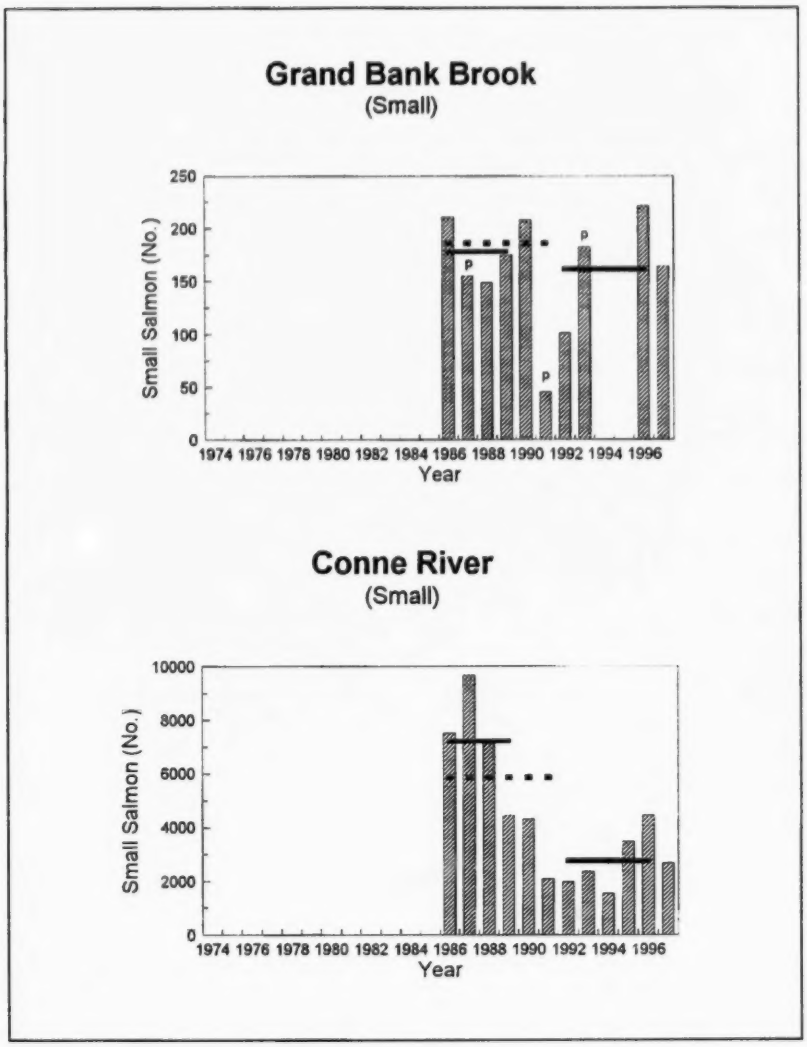

Fig. 18. Counts of small salmon at the Grand Bank Brook fishway and the Conne River counting fence, SFA 11. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-96 mean. P = partial count, not included in the means.

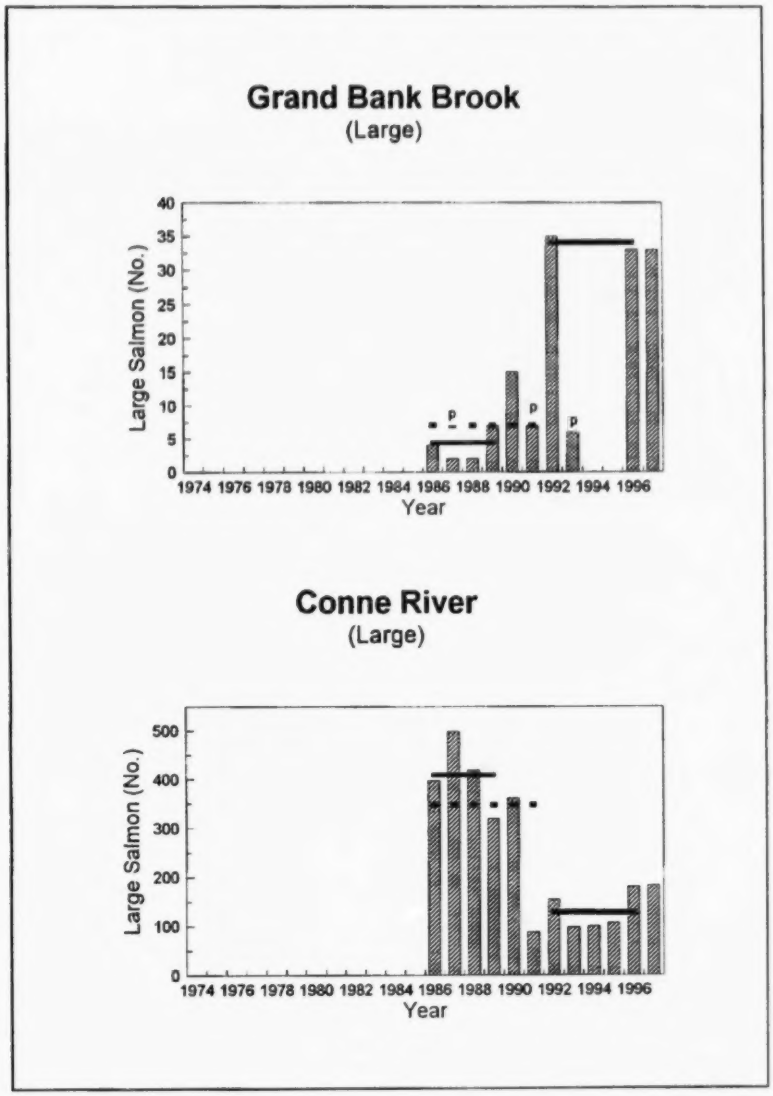

Fig. 19. Counts of large salmon at the Grand Bank Brook fishway and the Conne River counting fence, SFA 11. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-96 mean. P = partial count, not included in the means.

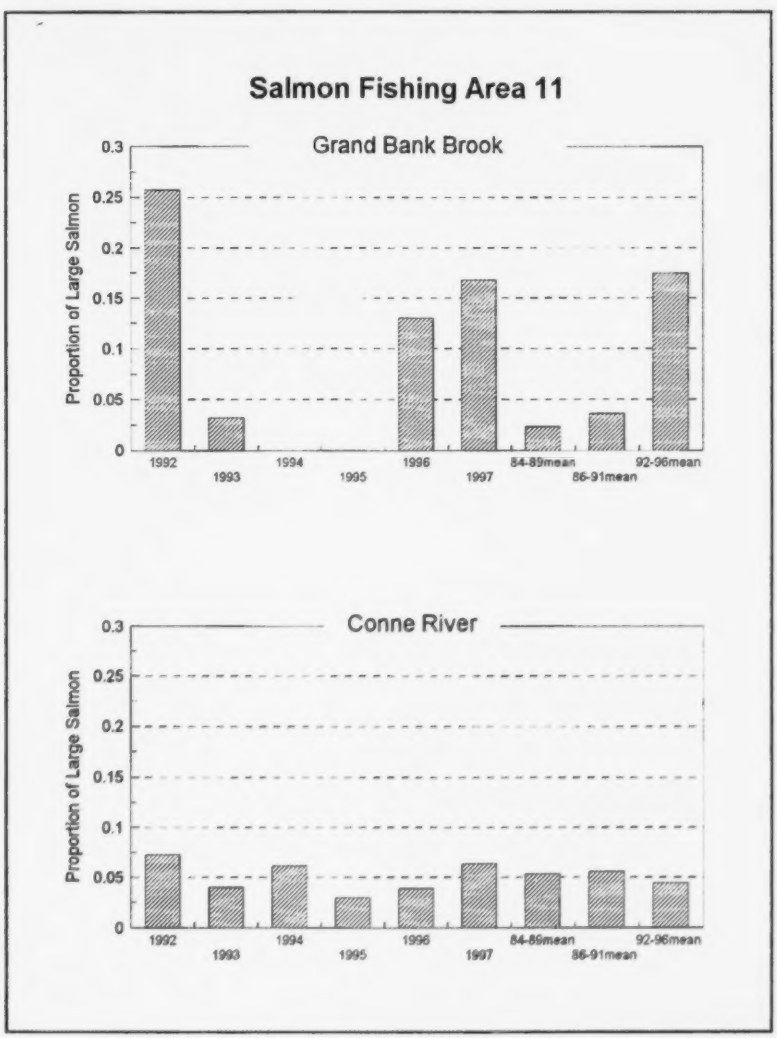

Fig. 20. Proportion of large salmon for Grand Bank Brook, and Conne River, SFA 11, 1992-97, and the 1984-89, 1986-91 and 1992-96 means.

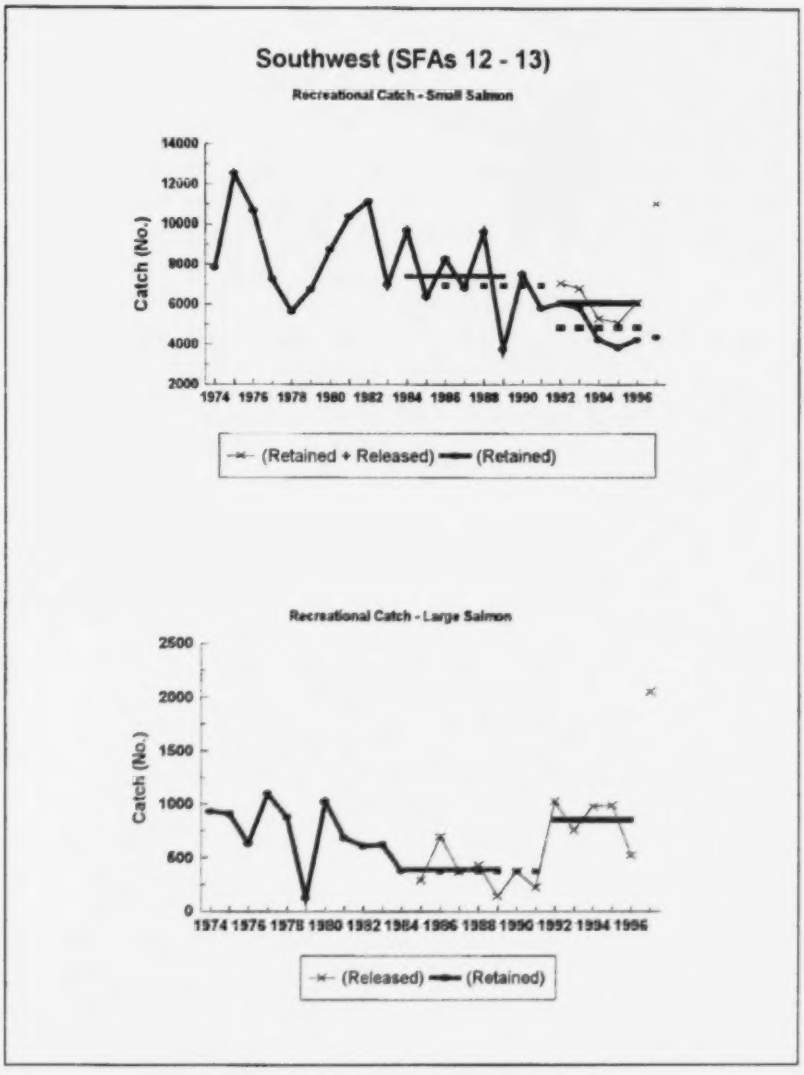

Fig. 21. Recreational catch of small salmon (retained, 1974-97; retained plus releasesd, 1992-97), for Southwest (SFAs 12-13). The catch of large salmon prior to1985 is retained and for 1985-97 is released. The thin solid horizontal line represents the 1984-89 mean, the thin broken line the 1986-91 mean, the thick solid line the 1992-96 mean (retained + released), and the thick broken line the 1992-96 mean (retained only). Catch totals for 1996 are incomplete because data were unavailable for several rivers in SFAs 12 and 13. The 1997 data, obtained from the licence stub return, are preliminary and are represented by single points which are not continuous with the lines.

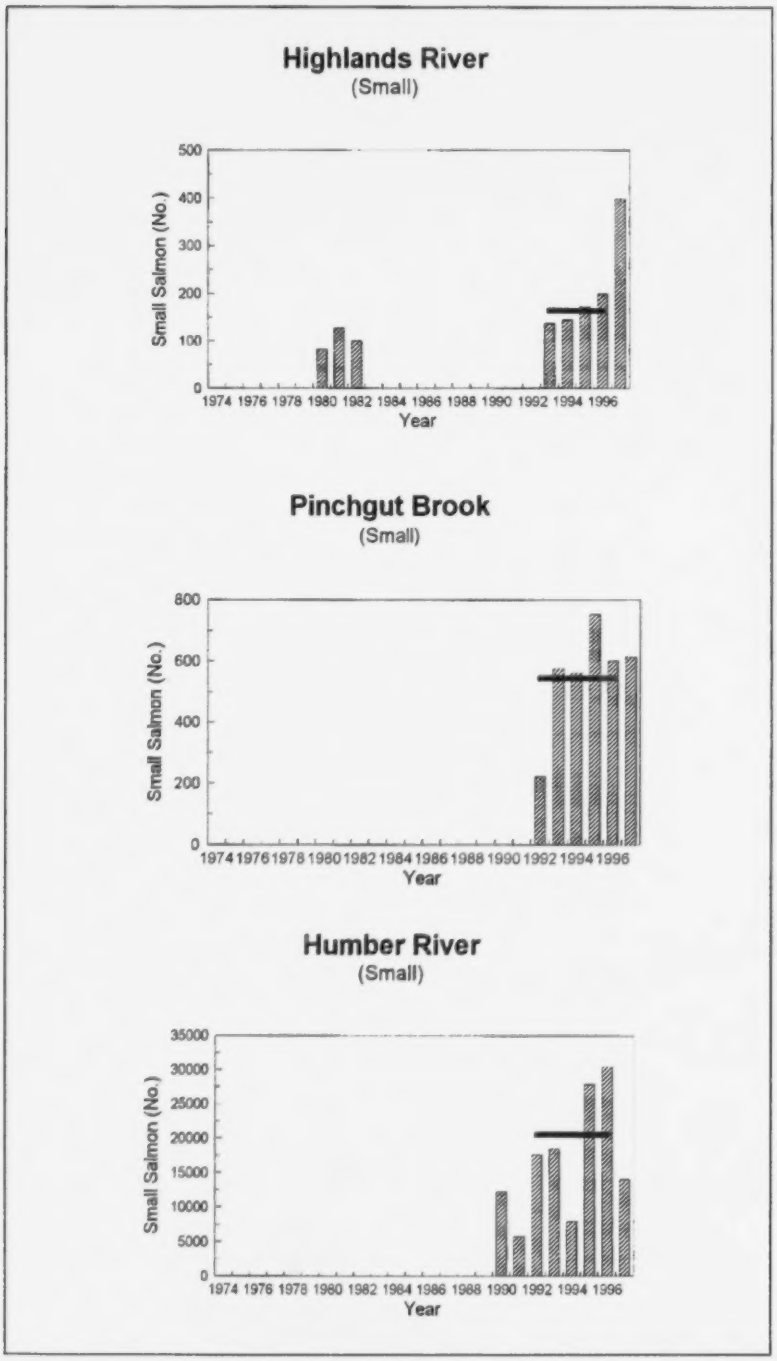

Fig. 22. Counts of small salmon at counting fences in Highlands River and Pinchgut Brook and the mark-recapture study in Humber River, SFA 13. The thick solid horizontal line represents the 1992-96 mean.

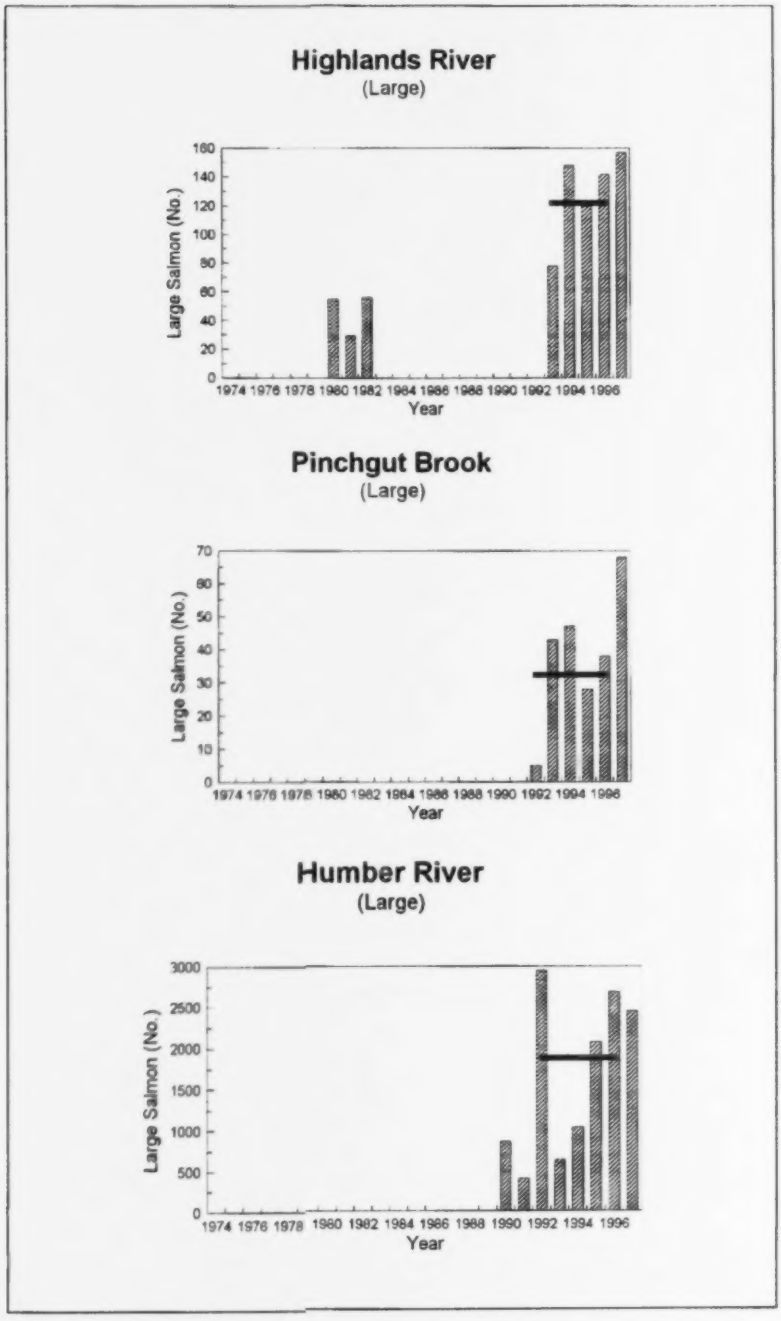

Fig. 23. Counts of large salmon at counting fences in Highlands River and Pinchgut Brook and the mark-recapture study in Humber River, SFA 13. The thick solid horizontal line represents the 1992-96 mean.

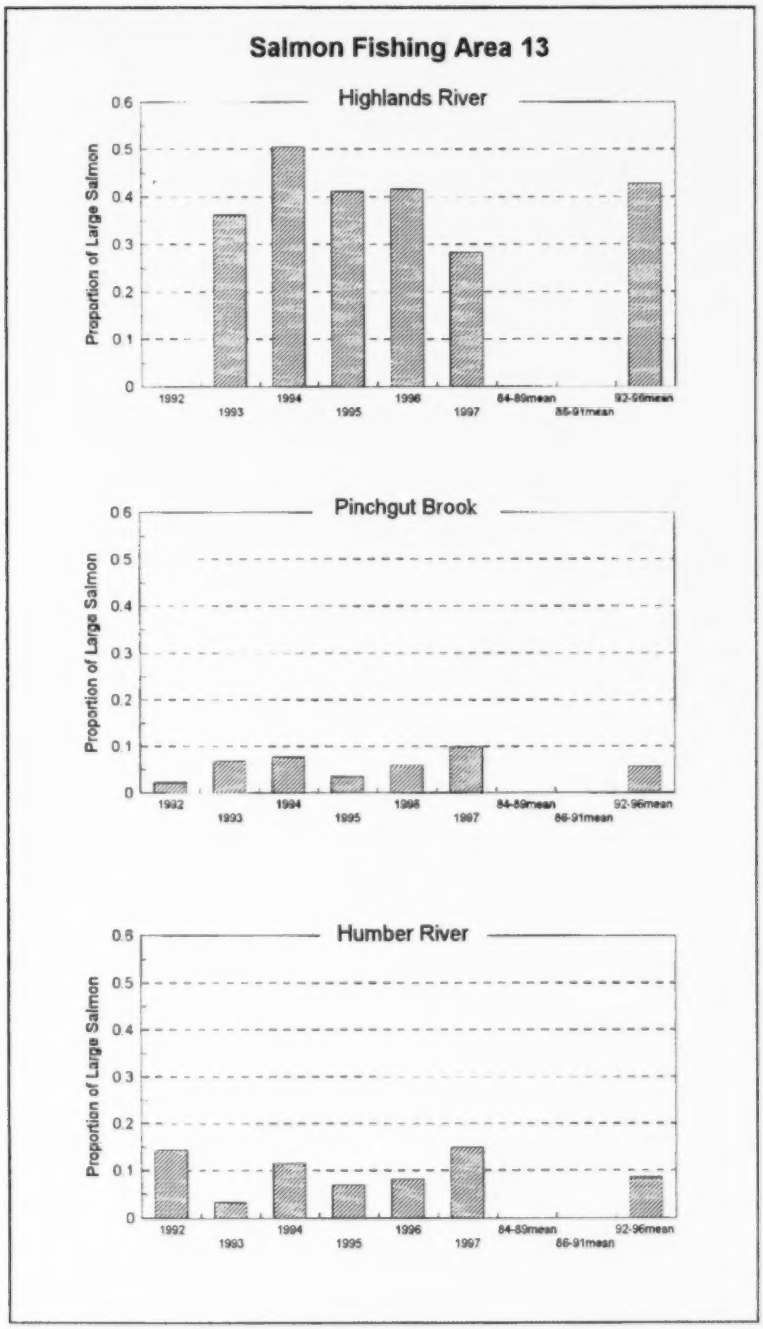

Fig. 24. Proportion of large salmon for Highlands River, Pinchgut Brook, and Humber River, SFA 13, 1992-97, and the 1984-89, 1986-91 and 1992-96 means.

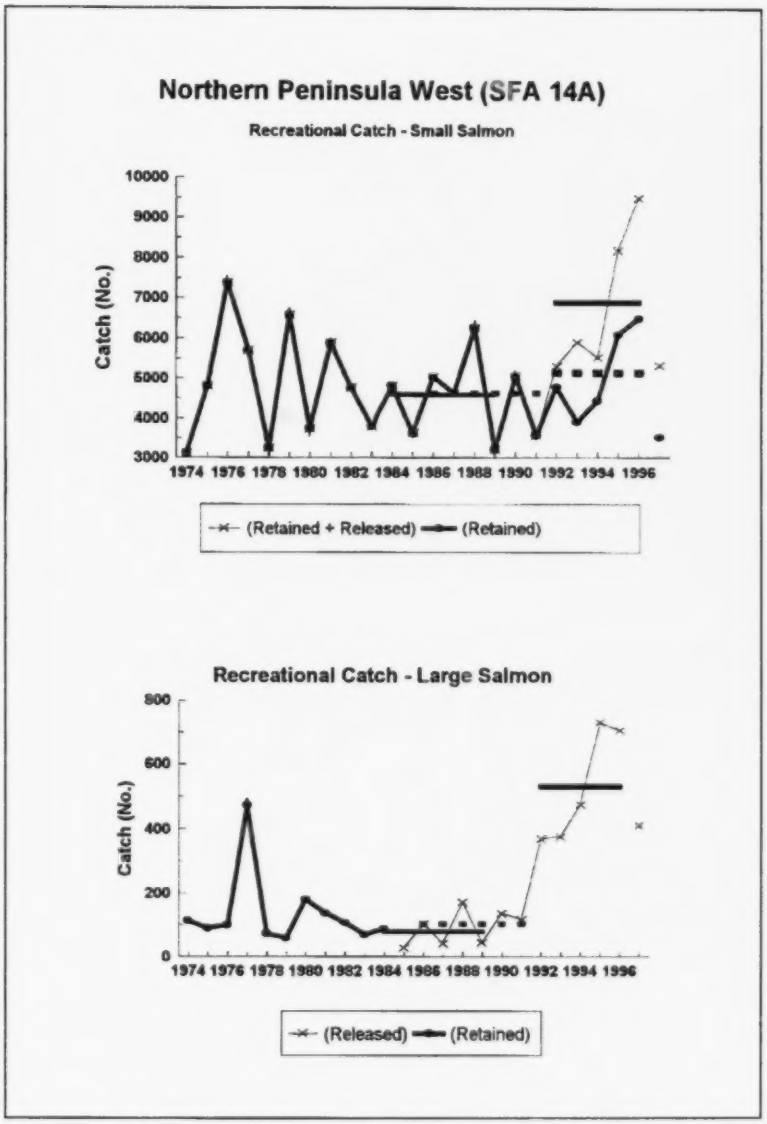

Fig. 25. Recreational catch of small salmon (retained, 1974-97; retained plus releasesd, 1992-97), for Northern Peninsula West (SFA 14A). The catch of large salmon prior to1985 is retained and for 1985-97 is released. The thin solid horizontal line represents the 1984-89 mean, the thin broken line the 1986-91 mean, the thick solid line the 1992-96 mean (retained + released), and the thick broken line the 1992-96 mean (retained only). The 1997 data, obtained from the licence stub return, are preliminary and are represented by single points which are not continuous with the lines.

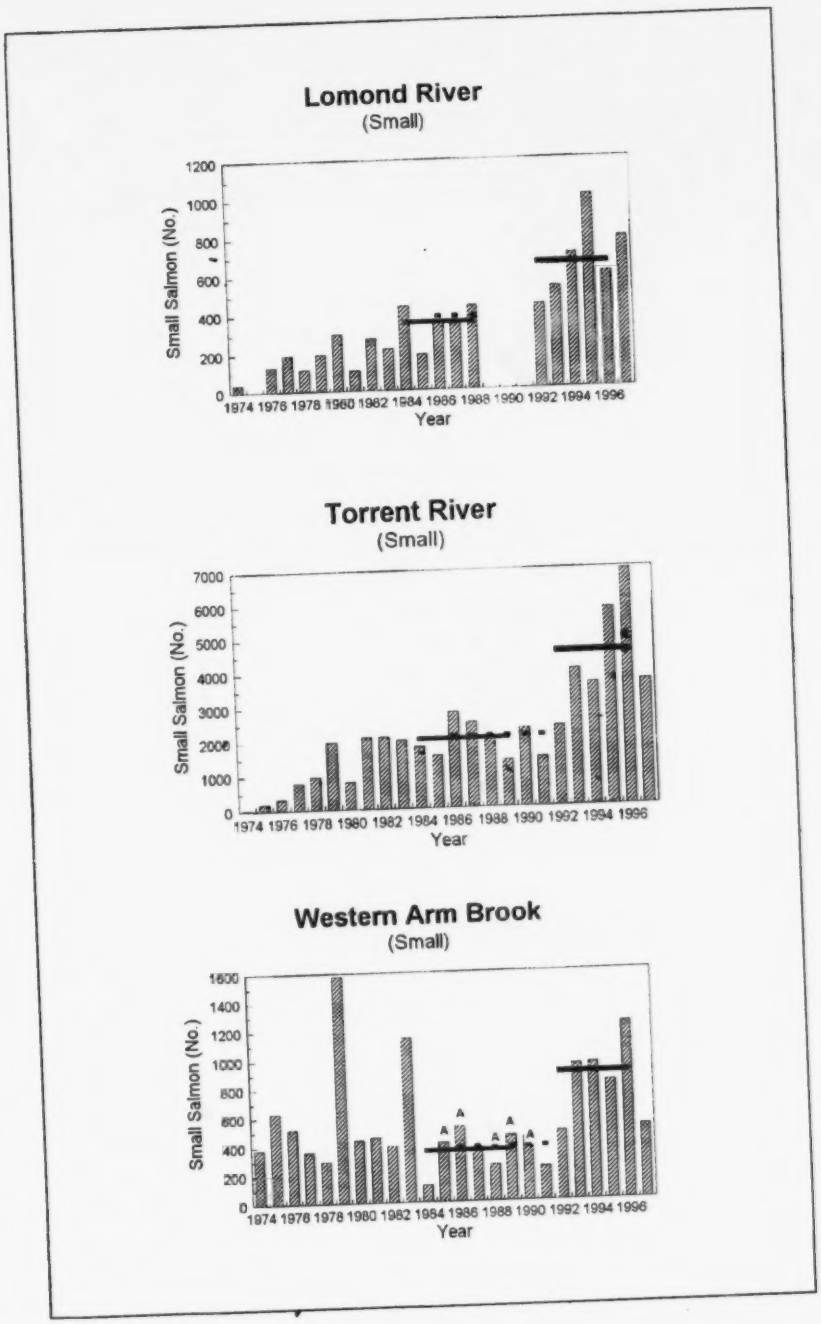

Fig. 26. Counts of small salmon at fishways in Lomond River and Torrent River and at the counting fence in Western Arm Brook, SFA 14A. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-96 mean. A = adjusted count.

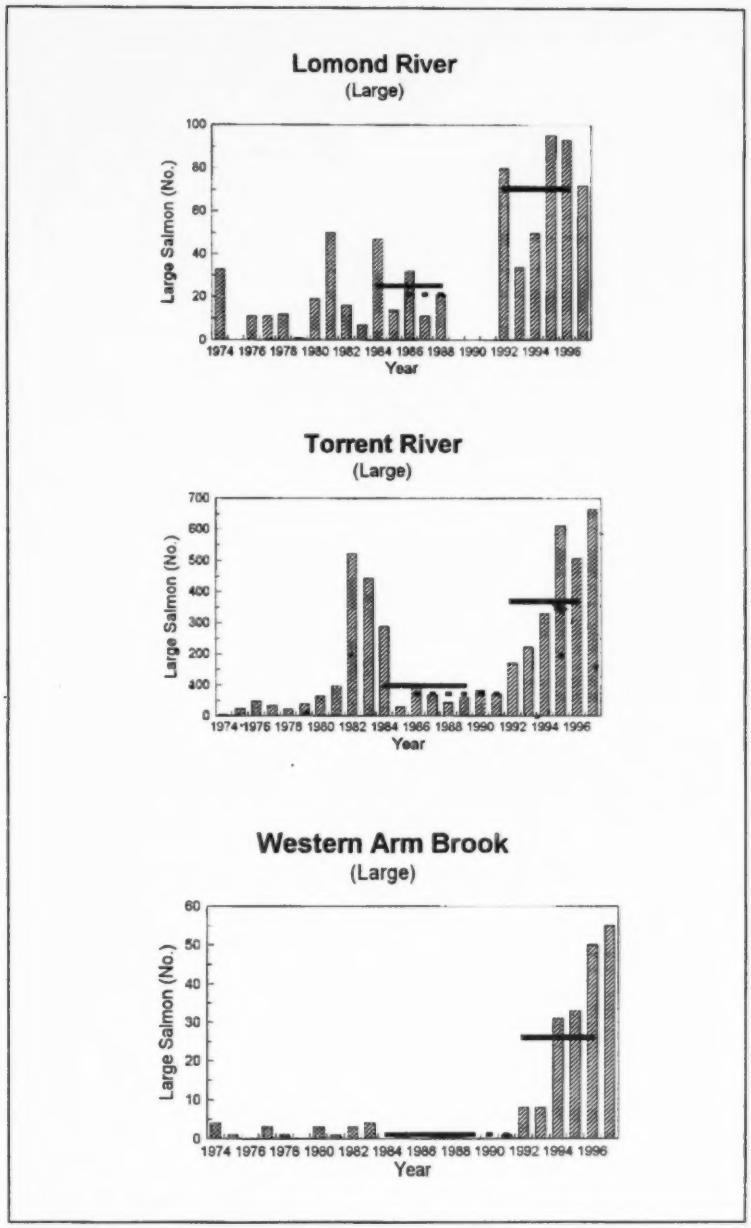

Fig. 27. Counts of large salmon at fishways in Lomond River and Torrent River and at the counting fence in Western Arm Brook, SFA 14A. The thin solid horizontal line represents the 1984-89 mean, the broken line the1986-91 mean, and the thick solid line the 1992-96 mean.

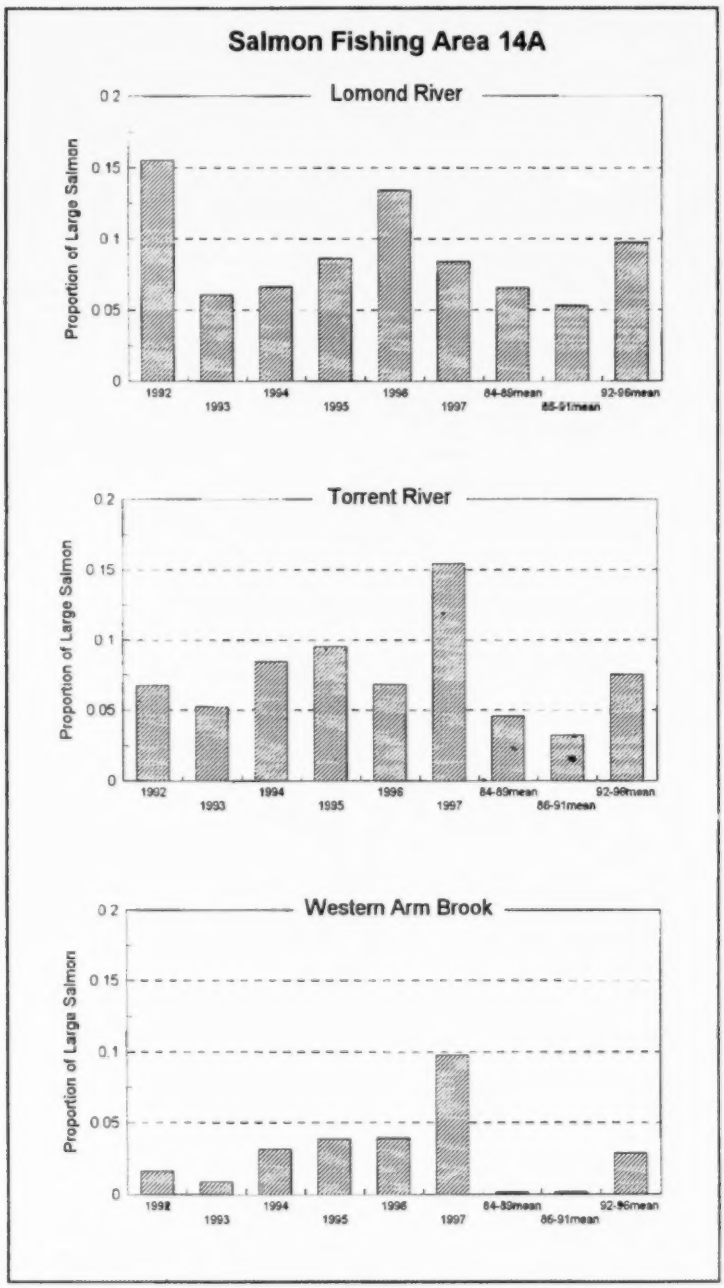

Fig. 28. Proportion of large salmon for Lomond River, Torrent River, and Western Arm Brook, SFA 14A, 1992-97, and the 1984-89, 1986-91 and 1992-96 means.

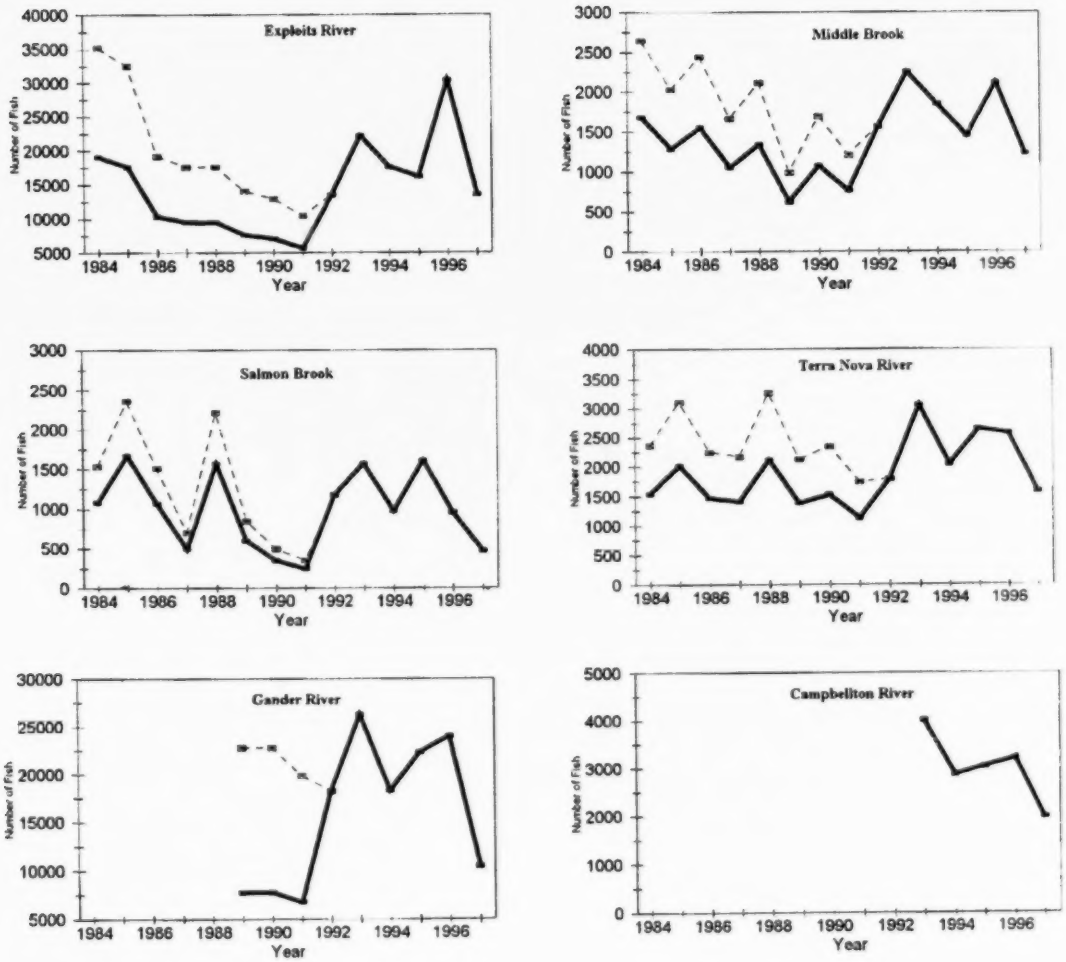

Fig. 29. Estimated total returns of small Atlantic salmon to Northeast and East coast Newfoundland rivers, 1984-1997. Dashed lines represent stock size adjusted for marine exploitation (from Dempson *et al.* MS 1998).

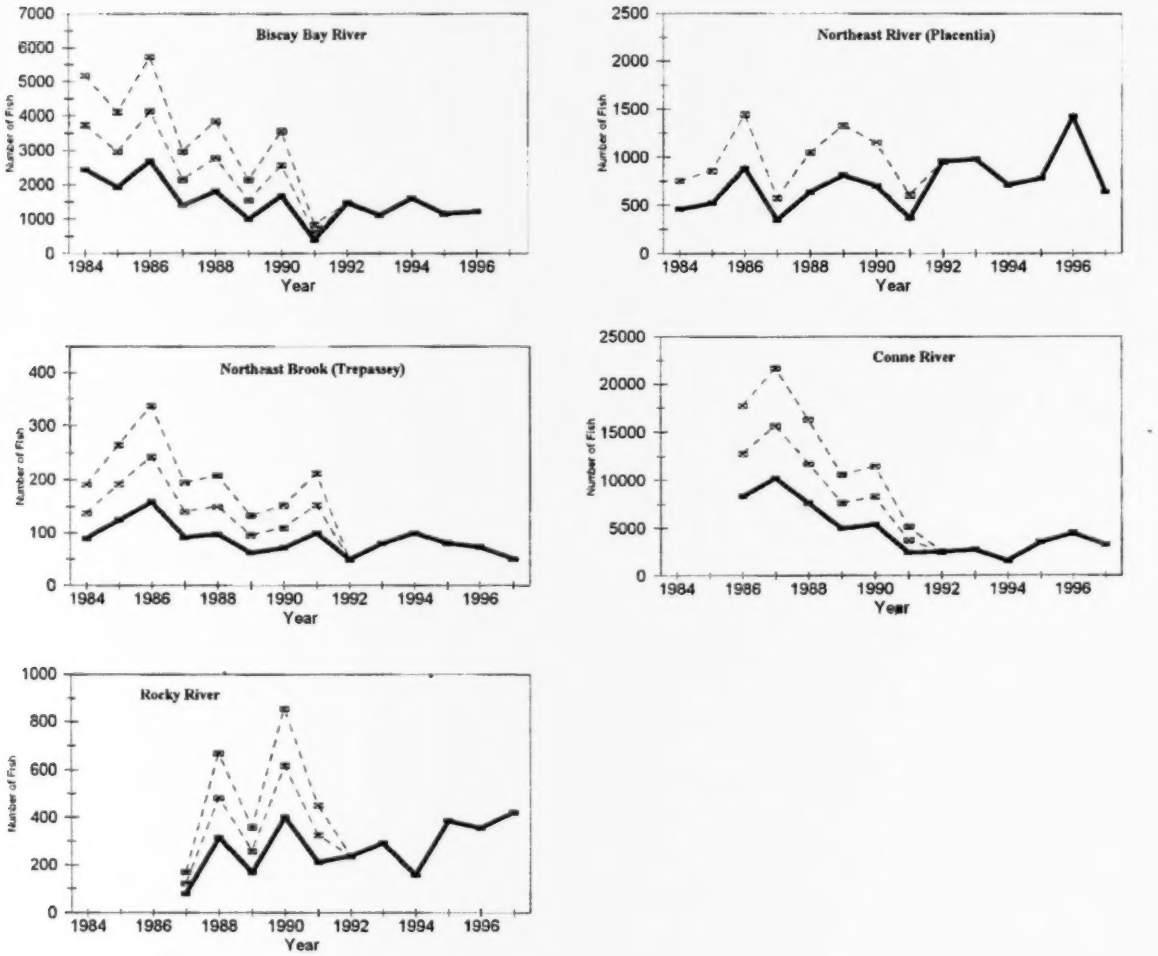

Fig. 30. Estimated total returns of small Atlantic salmon to South coast Newfoundland rivers, 1984-97. Dashed lines represent stock size adjusted for marine exploitation, here showing the upper and lower confidence intervals derived from the mean exploitation on other stocks, except for Northeast River (Placentia) which uses its own individual value (from Dempson *et al.* MS 1998).

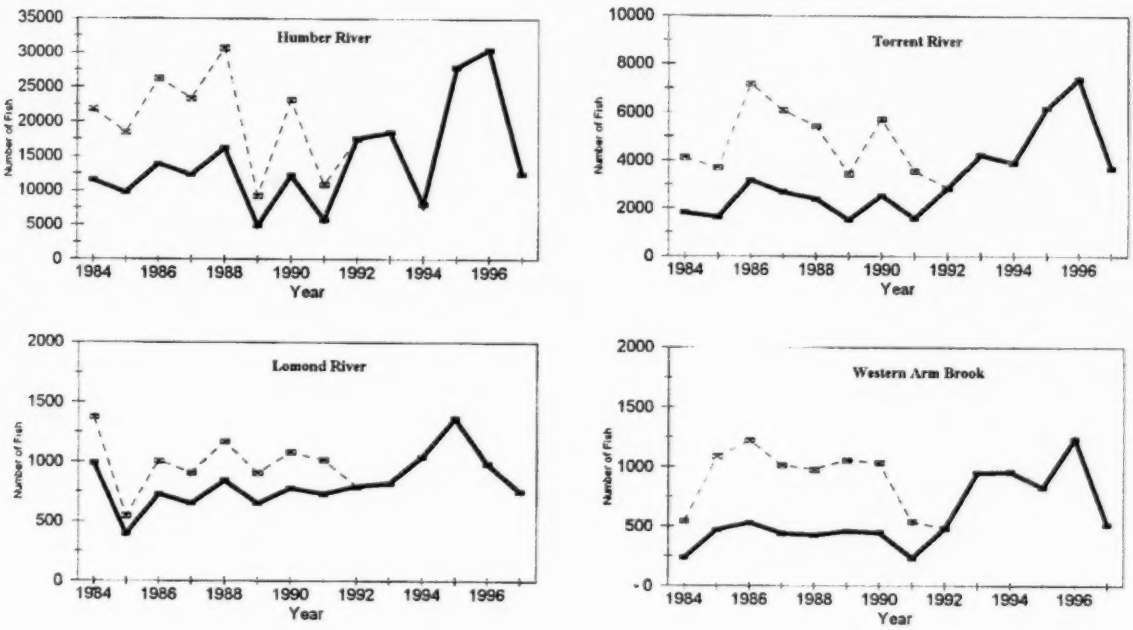

Fig. 31. Estimated total returns of small Atlantic salmon to West and Northwest coast Newfoundland rivers, 1984-1997. Dashed lines represent stock size adjusted for marine exploitation (from Dempson *et al.* MS 1998).

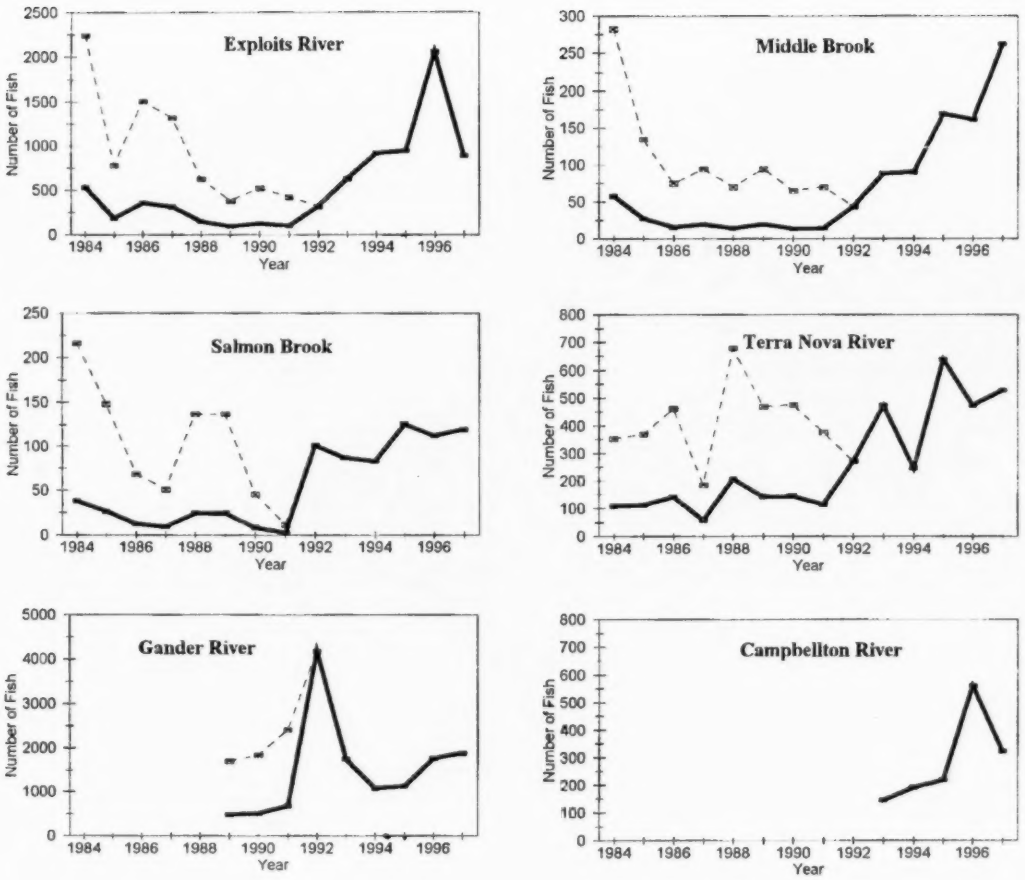

Fig. 32. Estimated total returns of large Atlantic salmon to Northeast and East coast Newfoundland rivers, 1984-1997. Dashed lines represent stock size adjusted for marine exploitation (from Dempson *et al.* MS 1998).

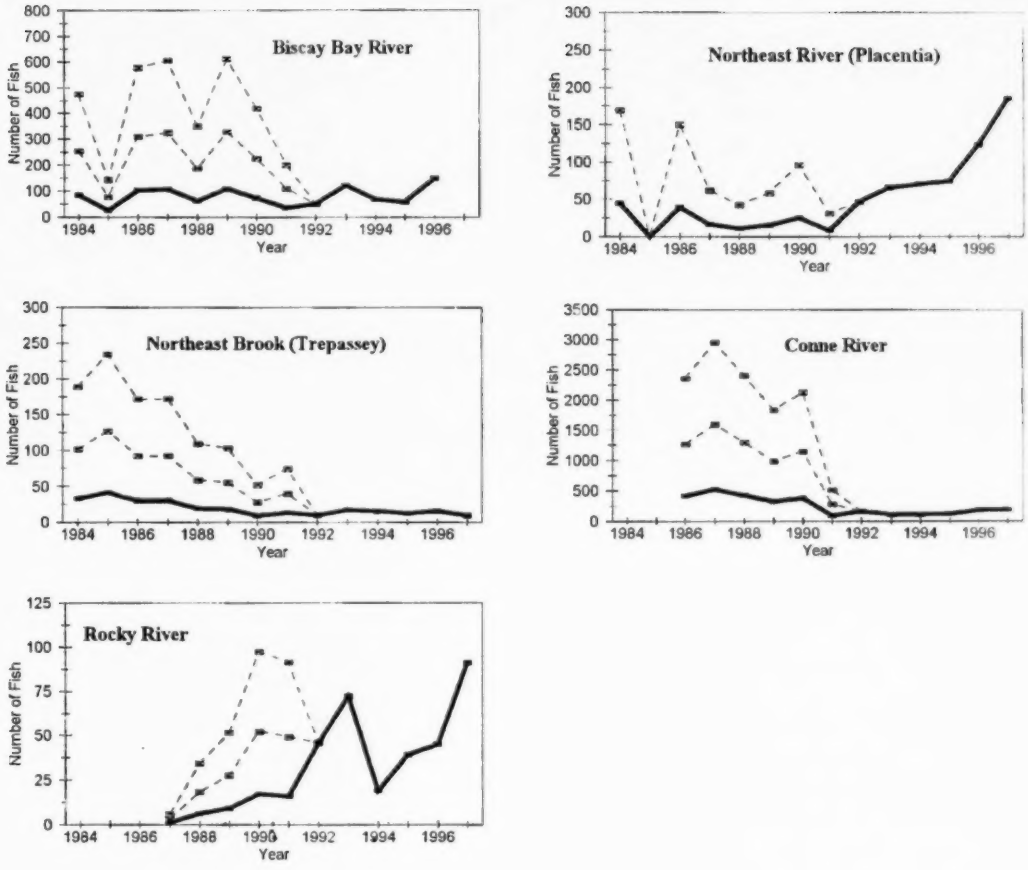

Fig. 33. Estimated total returns of large Atlantic salmon to South coast Newfoundland rivers, 1984-97. Dashed lines represent stock size adjusted for marine exploitation, here showing the upper and lower confidence intervals derived from the mean exploitation on other stocks, except for Northeast River (Placentia) which uses its own individual value (from Dempson *et al.* MS 1998).

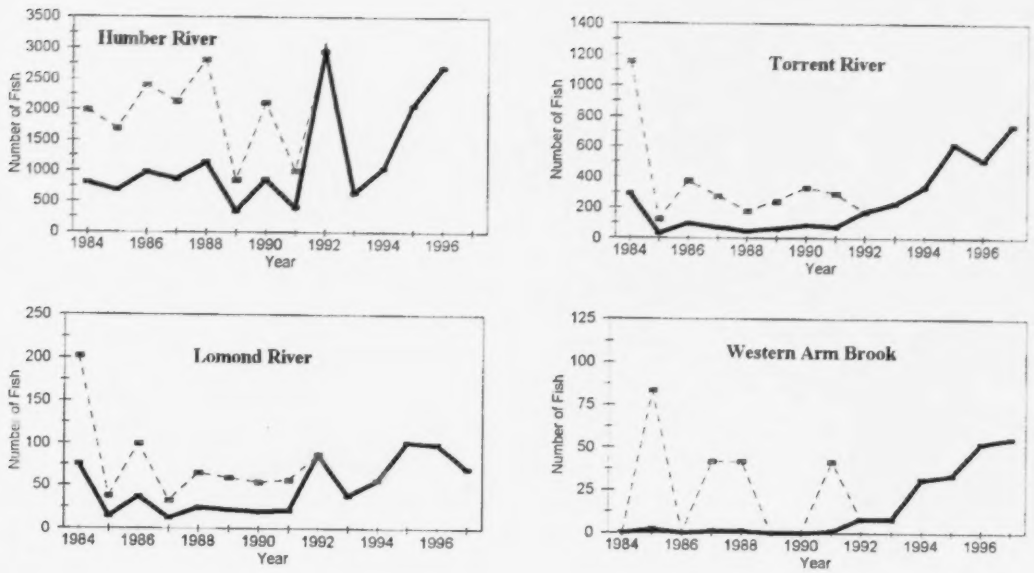

Fig. 34. Estimated returns of large Atlantic salmon to West and Northwest coast Newfoundland rivers, 1984-1997. Dashed lines represent stock size adjusted for marine exploitation (from Dempson *et al.* MS 1998).

Appendix 1a. Atlantic salmon recreational fishery catch and effort data for insular Newfoundland (SFAs 3 - 14A), 1974-97.
Ret = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	108199	26485	.	26485	1213	.	1213	27698	.	27698	0.26
1975	102907	33390	.	33390	1241	.	1241	34631	.	34631	0.34
1976	115847	34463	.	34463	1051	.	1051	35514	.	35514	0.31
1977	111836	34352	.	34352	2755	.	2755	37107	.	37107	0.33
1978	96659	28619	.	28619	1563	.	1563	30182	.	30182	0.31
1979	82578	31169	.	31169	561	.	561	31730	.	31730	0.38
1980	104332	35849	.	35849	1922	.	1922	37771	.	37771	0.36
1981	122476	46670	.	46670	1369	.	1369	48039	.	48039	0.39
1982	129369	41871	.	41871	1248	.	1248	43119	.	43119	0.33
1983	126308	32420	.	32420	1382	.	1382	33802	.	33802	0.27
1984	121979	39331	.	39331	511	.	511	39842	.	39842	0.33
1985	120030	36552	.	36552	*	315	315	36552	315	36867	0.31
1986	123528	37496	.	37496	*	798	798	37496	798	38294	0.31
1987	85969	24482	.	24482	*	410	410	24482	410	24892	0.29
1988	120497	39841	.	39841	*	600	600	39841	600	40441	0.34
1989	91286	18462	.	18462	*	183	183	18462	183	18645	0.20
1990	105736	29967	.	29967	*	503	503	29967	503	30470	0.29
1991	89812	20529	.	20529	*	336	336	20529	336	20865	0.23
1992	95931	23118	5642	28760	*	1413	1413	23118	7055	30173	0.31
1993	125661	24693	16403	41096	*	1640	1640	24693	18043	42736	0.34
1994	141508	28959	8370	37329	*	2052	2052	28959	10422	39381	0.28
1995	143275	29055	9575	38630	*	2188	2188	29055	11763	40818	0.28
1996	156631	35759	15549	51308	*	1871	1871	35759	17420	53179	0.34
1997		17158	15098	32256	*	3203	3203	17158	18301	35459	
84-89 $\bar{X}$	115464.0	34336.4	.	34336.4	.	474.0	481.4	34438.6	474.0	34817.8	0.30
95% CL	16865.5	11141.0	.	11141.0	.	441.3	298.9	11232.5	441.3	11356.3	0.06
N	5	5	0	5	0	4	5	5	4	5	5
86-91 $\bar{X}$	106171.8	29259.0	.	29259.0	.	484.0	484.0	29259.0	484.0	29743.0	0.28
95% CL	19588.7	11990.2	.	11990.2	.	294.4	294.4	11990.2	294.4	12259.7	0.07
N	5	5	0	5	0	5	5	5	5	5	5
92-96 $\bar{X}$	132601.2	28316.8	11107.8	39424.6	.	1832.8	1832.8	28316.8	12940.6	41257.4	0.31
95% CL	28872.8	6097.8	5805.9	10062.1	.	387.2	387.2	6097.8	5836.5	10216.4	0.04
N	5	5	5	5	0	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-97 AND ON RETAINED FISH ONLY PRIOR TO 1985.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
NOTE: DATA WERE UNAVAILABLE FOR SOME RIVERS IN INSULAR NEWFOUNDLAND (SFAs 12 AND 13) IN 1996.

Appendix 1b. Atlantic salmon recreational fishery catch and effort data for Northern Peninsula East & Eastern (SFAs 3 - 8), 1974-97. Ret = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret	Rel.	Tot.	CPUE
1974	38626	8336	.	8336	110	.	110	8446	.	8446	0.22
1975	35673	9259	.	9259	190	.	190	9449	.	9449	0.26
1976	38552	9885	.	9885	256	.	256	10141	.	10141	0.26
1977	45112	15102	.	15102	1154	.	1154	16256	.	16256	0.36
1978	39561	12829	.	12829	539	.	539	13368	.	13368	0.34
1979	31365	11866	.	11866	349	.	349	12215	.	12215	0.39
1980	40581	14401	.	14401	588	.	588	14989	.	14989	0.37
1981	49396	20187	.	20187	430	.	430	20617	.	20617	0.42
1982	51961	15568	.	15568	435	.	435	16003	.	16003	0.31
1983	46821	13404	.	13404	518	.	518	13922	.	13922	0.30
1984	49240	14091	.	14091	25	.	25	14116	.	14116	0.29
1985	52799	17628	.	17628	*	.	.	17628	.	17628	0.33
1986	48582	14803	.	14803	*	.	.	14803	.	14803	0.30
1987	27158	7888	.	7888	*	.	.	7888	.	7888	0.29
1988	46400	16412	.	16412	*	.	.	16412	.	16412	0.35
1989	30571	6352	.	6352	*	.	.	6352	.	6352	0.21
1990	38956	10262	.	10262	*	.	.	10262	.	10262	0.26
1991	35084	8489	.	8489	*	.	.	8489	.	8489	0.24
1992	36254	9063	2373	11436	*	11	11	9063	2384	11447	0.32
1993	52640	9729	11911	21640	*	426	426	9729	12337	22066	0.42
1994	72813	16250	5283	21533	*	539	539	16250	5822	22072	0.30
1995	63184	12823	4738	17561	*	421	421	12823	5159	17982	0.28
1996	71615	17555	8244	25799	*	505	505	17555	8749	26304	0.37
1997		5783	3945	9728	*	479	479	5783	4424	10207	
84-89 $\bar{X}$	45518.4	13857.2	.	13857.2	.	.	.	13862.2	.	13862.2	0.30
95% CL	10759.4	5483.0	.	5483.0	.	.	.	5483.4	.	5483.4	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	39918.6	11263.6	.	11263.6	.	.	.	11263.6	.	11263.6	0.28
95% CL	9388.1	5261.9	.	5261.9	.	.	.	5261.9	.	5261.9	0.07
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	59301.2	13084.0	6509.8	19593.8	.	380.4	380.4	13084.0	6890.2	19974.2	0.34
95% CL	18877.0	4707.2	4558.8	6718.1	.	264.0	264.0	4707.2	4709.7	6954.6	0.07
N	5	5	5	5	0	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1c. Atlantic salmon recreational fishery catch and effort data for South (SFAs 9 - 11), 1974-97.
Ret = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	29268	7182	.	7182	61	.	61	7243	.	7243	0.25
1975	24518	6800	.	6800	55	.	55	6855	.	6855	0.28
1976	26301	6517	.	6517	64	.	64	6581	.	6581	0.25
1977	23945	6273	.	6273	32	.	32	6305	.	6305	0.26
1978	24038	6894	.	6894	77	.	77	6971	.	6971	0.29
1979	18834	5983	.	5983	30	.	30	6013	.	6013	0.32
1980	26044	8972	.	8972	132	.	132	9104	.	9104	0.35
1981	28488	10241	.	10241	122	.	122	10363	.	10363	0.36
1982	33239	10419	.	10419	96	.	96	10515	.	10515	0.32
1983	35346	8212	.	8212	177	.	177	8389	.	8389	0.24
1984	30500	10740	.	10740	22	.	22	10762	.	10762	0.35
1985	29984	8899	.	8899	*	.	.	8899	.	8899	0.30
1986	30427	9379	.	9379	*	.	.	9379	.	9379	0.31
1987	20651	5125	.	5125	*	.	.	5125	.	5125	0.25
1988	27166	7548	.	7548	*	.	.	7548	.	7548	0.28
1989	23291	5173	.	5173	*	.	.	5173	.	5173	0.22
1990	25538	7147	.	7147	*	.	.	7147	.	7147	0.28
1991	17089	2643	.	2643	*	.	.	2643	.	2643	0.15
1992	18100	3208	1732	4940	*	8	8	3208	1740	4948	0.27
1993	29280	5215	1506	6721	*	84	84	5215	1590	6805	0.23
1994	25073	4055	917	4972	*	61	61	4055	978	5033	0.20
1995	35146	6299	1499	7798	*	47	47	6299	1546	7845	0.22
1996	41628	7498	2425	9923	*	139	139	7498	2564	10062	0.24
1997		3506	2673	6179	*	259	259	3506	2932	6438	
84-89 $\bar{X}$	28273.6	8347.8	.	8347.8	.	.	.	8352.2	.	8352.2	0.30
95% CL	3855.2	2619.5	.	2619.5	.	.	.	2627.3	.	2627.3	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	24702.2	6378.0	.	6378.0	.	.	.	6378.0	.	6378.0	0.26
95% CL	6191.6	3187.5	.	3187.5	.	.	.	3187.5	.	3187.5	0.07
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	29845.4	5255.0	1615.8	6870.8	.	67.8	67.8	5255.0	1683.6	6938.6	0.23
95% CL	11241.5	2128.0	675.0	2599.0	.	60.1	60.1	2128.0	708.8	2647.3	0.02
N	5	5	5	5	0	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 1d. Atlantic salmon recreational fishery catch and effort data for Southwest (SFAs 12 & 13), 1974-97.
Ret = retained fish, Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	30736	7847	.	7847	929	.	929	8776	.	8776	0.29
1975	33457	12513	.	12513	906	.	906	13419	.	13419	0.40
1976	33848	10680	.	10680	631	.	631	11311	.	11311	0.33
1977	25712	7270	.	7270	1097	.	1097	8367	.	8367	0.33
1978	20991	5655	.	5655	875	.	875	6530	.	6530	0.31
1979	18094	6742	.	6742	123	.	123	6865	.	6865	0.38
1980	23488	8733	.	8733	1022	.	1022	9755	.	9755	0.42
1981	25874	10360	.	10360	680	.	680	11040	.	11040	0.43
1982	28056	11121	.	11121	610	.	610	11731	.	11731	0.42
1983	28121	7004	.	7004	618	.	618	7622	.	7622	0.27
1984	25742	9693	.	9693	377	.	377	10070	.	10070	0.39
1985	23859	6399	.	6399	*	287	287	6399	287	6686	0.28
1986	29137	8284	.	8284	*	696	696	8284	696	8980	0.31
1987	23099	6849	.	6849	*	369	369	6849	369	7218	0.31
1988	27963	9630	.	9630	*	429	429	9630	429	10059	0.36
1989	21201	3734	.	3734	*	139	139	3734	139	3873	0.18
1990	24829	7508	.	7508	*	367	367	7508	367	7875	0.32
1991	23789	5832	.	5832	*	219	219	5832	219	6051	0.25
1992	24460	6069	1006	7075	*	1025	1025	6069	2031	8100	0.33
1993	25883	5844	984	6828	*	754	754	5844	1738	7582	0.29
1994	22576	4225	1073	5298	*	977	977	4225	2050	6275	0.28
1995	20786	3843	1251	5094	*	989	989	3843	2240	6083	0.29
1996	17512	4221	1872	6093	*	521	521	4221	2393	6614	0.38
1997		4355	6678	11033	*	2054	2054	4355	8732	13087	
84-89 $\bar{X}$	25166.8	7431.5	.	7431.5	.	384.0	382.8	7494.3	384.0	7814.3	0.31
95% CL	3170.6	2382.0	.	2382.0	.	255.2	193.0	2464.9	255.2	2512.4	0.07
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	25003.0	6972.8	.	6972.8	.	369.8	369.8	6972.8	369.8	7342.7	0.29
95% CL	3164.0	2144.5	.	2144.5	.	202.4	202.4	2144.5	202.4	2302.7	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	22243.4	4840.4	1237.2	6077.6	.	853.2	853.2	4840.4	2090.4	6930.8	0.31
95% CL	4060.0	1283.3	459.4	1098.8	.	265.9	265.9	1283.3	306.2	1082.3	0.04
N	5	5	5	5	0	5	5	5	5	5	5

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-97 AND ON RETAINED FISH ONLY PRIOR TO 1985.
NOTE: DATA WERE UNAVAILABLE FOR A NUMBER OF RIVERS IN SFAs 12 AND 13 IN 1996.

Appendix 1e. Atlantic salmon recreational fishery catch and effort data for the Northern Peninsula West (SFA 14A), 1974-97. Ret = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9569	3120	.	3120	113	.	113	3233	.	3233	0.34
1975	9259	4818	.	4818	90	.	90	4908	.	4908	0.53
1976	17146	7381	.	7381	100	.	100	7481	.	7481	0.44
1977	17067	5707	.	5707	472	.	472	6179	.	6179	0.36
1978	12069	3241	.	3241	72	.	72	3313	.	3313	0.27
1979	14285	6578	.	6578	59	.	59	6637	.	6637	0.46
1980	14219	3743	.	3743	180	.	180	3923	.	3923	0.28
1981	18718	5882	.	5882	137	.	137	6019	.	6019	0.32
1982	16113	4763	.	4763	107	.	107	4870	.	4870	0.30
1983	16020	3800	.	3800	69	.	69	3869	.	3869	0.24
1984	16497	4807	.	4807	87	.	87	4894	.	4894	0.30
1985	13388	3626	.	3626	*	28	28	3626	28	3654	0.27
1986	15382	5030	.	5030	*	102	102	5030	102	5132	0.33
1987	15061	4620	.	4620	*	41	41	4620	41	4661	0.31
1988	18968	6251	.	6251	*	171	171	6251	171	6422	0.34
1989	16223	3203	.	3203	*	44	44	3203	44	3247	0.20
1990	16413	5050	.	5050	*	136	136	5050	136	5186	0.32
1991	13850	3565	.	3565	*	117	117	3565	117	3682	0.27
1992	17117	4778	531	5309	*	369	369	4778	900	5678	0.33
1993	17858	3905	2002	5907	*	376	376	3905	2378	6283	0.35
1994	21046	4429	1097	5526	*	475	475	4429	1572	6001	0.29
1995	24159	6090	2087	8177	*	731	731	6090	2818	8908	0.37
1996	25876	6485	3008	9493	*	706	706	6485	3714	10199	0.39
1997		3514	1802	5316	*	411	411	3514	2213	5727	
84-89 $\bar{X}$	15919.8	4589.5	.	4589.5	.	77.2	78.8	4604.0	77.2	4668.3	0.29
95% CL	1944.1	1135.7	.	1135.7	.	74.1	56.2	1139.9	74.1	1186.6	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15982.8	4619.8	.	4619.8	.	101.8	101.8	4619.8	101.8	4721.7	0.30
95% CL	1812.7	1162.6	.	1162.6	.	54.0	54.0	1162.6	54.0	1199.9	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	21211.2	5137.4	1745.0	6882.4	.	531.4	531.4	5137.4	2276.4	7413.8	0.35
95% CL	4747.0	1370.3	1189.5	2302.4	.	218.6	218.6	1370.3	1354.4	2504.4	0.05
N	5	5	5	5	0	5	5	5	5	5	5

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-97 AND ON RETAINED FISH ONLY PRIOR TO 1985.

Appendix 1f. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 3, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1890	839	.	839	4	.	4	843	.	843	0.45
1975	1948	1107	.	1107	0	.	0	1107	.	1107	0.57
1976	2284	947	.	947	1	.	1	948	.	948	0.42
1977	2249	1530	.	1530	4	.	4	1534	.	1534	0.68
1978	2030	758	.	758	1	.	1	759	.	759	0.37
1979	2514	2040	.	2040	0	.	0	2040	.	2040	0.81
1980	2585	1743	.	1743	37	.	37	1780	.	1780	0.69
1981	3113	2358	.	2358	3	.	3	2361	.	2361	0.76
1982	3907	2634	.	2634	88	.	88	2722	.	2722	0.70
1983	4075	1617	.	1617	2	.	2	1619	.	1619	0.40
1984	2248	1001	.	1001	0	.	0	1001	.	1001	0.45
1985	2355	1310	.	1310	*	.	.	1310	.	1310	0.56
1986	1430	772	.	772	*	.	.	772	.	772	0.54
1987	1121	563	.	563	*	.	.	563	.	563	0.50
1988	2979	1756	.	1756	*	.	.	1756	.	1756	0.59
1989	1672	738	.	738	*	.	.	738	.	738	0.44
1990	3159	1718	.	1718	*	.	.	1718	.	1718	0.54
1991	3495	1316	.	1316	*	.	.	1316	.	1316	0.38
1992	3961	1562	120	1682	*	5	5	1562	125	1687	0.43
1993	4384	1480	2585	4065	*	152	152	1480	2737	4217	0.96
1994	7715	3314	1844	5158	*	404	404	3314	2248	5562	0.72
1995	5438	1405	890	2295	*	186	186	1405	1076	2481	0.46
1996	6363	2122	1118	3240	*	143	143	2122	1261	3383	0.53
1997**		1613	1294	2907	*	133	133	1613	1427	3040	
84-89 $\bar{X}$	2136.8	1115.4	.	1115.4	.	.	.	1115.4	.	1115.4	0.52
95% CL	756.4	527.3	.	527.3	.	.	.	527.3	.	527.3	0.09
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	2547.0	1260.0	.	1260.0	.	.	.	1260.0	.	1260.0	0.49
95% CL	1156.8	611.2	.	611.2	.	.	.	611.2	.	611.2	0.13
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	5572.2	1976.6	1311.4	3288.0	0.0	178.0	178.0	1976.6	1489.4	3466.0	0.62
95% CL	1887.1	992.2	1167.9	1718.9	0.0	178.8	178.8	992.2	1274.6	1872.4	0.24
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1g. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 4, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	22038	5373	.	5373	82	.	82	5455	.	5455	0.25
1975	22384	5943	.	5943	166	.	166	6109	.	6109	0.27
1976	24787	6683	.	6683	188	.	188	6871	.	6871	0.28
1977	28117	8396	.	8396	1086	.	1086	9482	.	9482	0.34
1978	24131	8774	.	8774	502	.	502	9276	.	9276	0.38
1979	21496	8026	.	8026	327	.	327	8353	.	8353	0.39
1980	25172	9414	.	9414	507	.	507	9921	.	9921	0.39
1981	32282	13536	.	13536	361	.	361	13897	.	13897	0.43
1982	32929	9973	.	9973	258	.	258	10231	.	10231	0.31
1983	26649	8954	.	8954	297	.	297	9251	.	9251	0.35
1984	29633	9900	.	9900	15	.	15	9915	.	9915	0.33
1985	34329	12190	.	12190	*	.	.	12190	.	12190	0.36
1986	31650	9293	.	9293	*	.	.	9293	.	9293	0.29
1987	18564	5453	.	5453	*	.	.	5453	.	5453	0.29
1988	27413	9854	.	9854	*	.	.	9854	.	9854	0.36
1989	17767	3786	.	3786	*	.	.	3786	.	3786	0.21
1990	23533	5661	.	5661	*	.	.	5661	.	5661	0.24
1991	21999	4892	.	4892	*	.	.	4892	.	4892	0.22
1992	19485	5290	1515	6805	*	5	5	5290	1520	6810	0.35
1993	30958	5724	7232	12956	*	158	158	5724	7390	13114	0.42
1994	43242	9351	2728	12079	*	79	79	9351	2807	12158	0.28
1995	36717	7979	3199	11178	*	151	151	7979	3350	11329	0.31
1996	44385	10960	6374	17334	*	232	232	10960	6606	17566	0.40
1997**		3234	2252	5486	*	300	300	3234	2552	5786	
84-89 $\bar{X}$	28158.4	9004.6	.	9004.6	.	.	.	9007.6	.	9007.6	0.32
95% CL	7875.7	3875.8	.	3875.8	.	.	.	3877.2	.	3877.2	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	24472.4	6697.2	.	6697.2	.	.	.	6697.2	.	6697.2	0.27
95% CL	6573.0	3372.1	.	3372.1	.	.	.	3372.1	.	3372.1	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	34957.4	7860.8	4209.6	12070.4	0.0	125.0	125.0	7860.8	4334.6	12195.4	0.35
95% CL	12660.5	2977.9	3059.7	4686.9	0.0	107.0	107.0	2977.9	3148.0	4785.8	0.08
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1h. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 5, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9335	1637	.	1637	21	.	21	1658	.	1658	0.18
1975	7527	1988	.	1988	23	.	23	2011	.	2011	0.27
1976	6975	1898	.	1898	65	.	65	1963	.	1963	0.28
1977	10572	4616	.	4616	44	.	44	4660	.	4660	0.44
1978	9108	2858	.	2858	28	.	28	2886	.	2886	0.32
1979	3926	1331	.	1331	20	.	20	1351	.	1351	0.34
1980	8155	2702	.	2702	29	.	29	2731	.	2731	0.33
1981	8863	3488	.	3488	35	.	35	3523	.	3523	0.40
1982	9935	2433	.	2433	53	.	53	2486	.	2486	0.25
1983	10195	2357	.	2357	170	.	170	2527	.	2527	0.25
1984	12403	2703	.	2703	1	.	1	2704	.	2704	0.22
1985	11613	3484	.	3484	*	.	.	3484	.	3484	0.30
1986	11510	4053	.	4053	*	.	.	4053	.	4053	0.35
1987	5267	1664	.	1664	*	.	.	1664	.	1664	0.32
1988	10497	4166	.	4166	*	.	.	4166	.	4166	0.40
1989	6617	1417	.	1417	*	.	.	1417	.	1417	0.21
1990	7999	2414	.	2414	*	.	.	2414	.	2414	0.30
1991	7002	2048	.	2048	*	.	.	2048	.	2048	0.29
1992	9230	1941	728	2669	*	1	1	1941	729	2670	0.29
1993	12949	2091	2008	4099	*	107	107	2091	2115	4206	0.32
1994	18000	3216	689	3905	*	52	52	3216	741	3957	0.22
1995	16691	2860	586	3446	*	76	76	2860	662	3522	0.21
1996	16415	3948	706	4654	*	113	113	3948	819	4767	0.29
1997**		886	379	1265	*	40	40	886	419	1305	
84-89 $\bar{X}$	10528.0	3164.6	.	3164.6	.	.	.	3164.8	.	3164.8	0.30
95% CL	2841.4	1410.2	.	1410.2	.	.	.	1410.1	.	1410.1	0.10
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	8725.0	2819.6	.	2819.6	.	.	.	2819.6	.	2819.6	0.32
95% CL	2694.0	1528.2	.	1528.2	.	.	.	1528.2	.	1528.2	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	14657.0	2811.2	943.4	3754.6	0.0	69.8	69.8	2811.2	1013.2	3824.4	0.26
95% CL	4423.0	1026.5	741.9	925.7	0.0	56.7	56.7	1026.5	767.8	976.7	0.06
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1i. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 6, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2685	303	.	303	1	.	1	304	.	304	0.11
1975	1851	94	.	94	1	.	1	95	.	95	0.05
1976	2864	247	.	247	2	.	2	249	.	249	0.09
1977	1869	401	.	401	19	.	19	420	.	420	0.22
1978	2237	296	.	296	7	.	7	303	.	303	0.14
1979	1766	244	.	244	2	.	2	246	.	246	0.14
1980	2807	320	.	320	14	.	14	334	.	334	0.12
1981	3406	605	.	605	29	.	29	634	.	634	0.19
1982	3031	288	.	288	17	.	17	305	.	305	0.10
1983	3684	296	.	296	10	.	10	306	.	306	0.08
1984	3218	312	.	312	5	.	5	317	.	317	0.10
1985	2256	429	.	429	*	.	.	429	.	429	0.19
1986	2596	445	.	445	*	.	.	445	.	445	0.17
1987	1306	137	.	137	*	.	.	137	.	137	0.10
1988	3392	429	.	429	*	.	.	429	.	429	0.13
1989	2959	246	.	246	*	.	.	246	.	246	0.08
1990	3089	334	.	334	*	.	.	334	.	334	0.11
1991	1620	186	.	186	*	.	.	186	.	186	0.11
1992	2265	230	10	240	*	0	0	230	10	240	0.11
1993	2784	323	81	404	*	9	9	323	90	413	0.15
1994	2429	241	21	262	*	4	4	241	25	266	0.11
1995	2513	336	61	397	*	8	8	336	69	405	0.16
1996	2331	327	43	370	*	17	17	327	60	387	0.17
1997**		34	15	49	*	2	2	34	17	51	
84-89 $\bar{X}$	2884.2	372.2	.	372.2	.	.	.	373.2	.	373.2	0.13
95% CL	573.2	109.8	.	109.8	.	.	.	108.8	.	108.8	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	2731.2	328.0	.	328.0	.	.	.	328.0	.	328.0	0.12
95% CL	848.8	139.9	.	139.9	.	.	.	139.9	.	139.9	0.04
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	2464.4	291.4	43.2	334.6	0.0	7.6	7.6	291.4	50.8	342.2	0.14
95% CL	250.9	63.8	35.9	96.5	0.0	7.9	7.9	63.8	40.6	102.4	0.03
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1j. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 7, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2019	133	.	133	2	.	2	135	.	135	0.07
1975	1436	40	.	40	0	.	0	40	.	40	0.03
1976	1128	30	.	30	0	.	0	30	.	30	0.03
1977	1775	78	.	78	1	.	1	79	.	79	0.04
1978	1786	99	.	99	1	.	1	100	.	100	0.06
1979	1332	125	.	125	0	.	0	125	.	125	0.09
1980	1546	102	.	102	1	.	1	103	.	103	0.07
1981	1348	123	.	123	2	.	2	125	.	125	0.09
1982	1621	155	.	155	10	.	10	165	.	165	0.10
1983	1804	139	.	139	34	.	34	173	.	173	0.10
1984	1381	96	.	96	4	.	4	100	.	100	0.07
1985	1635	112	.	112	*	.	.	112	.	112	0.07
1986	700	102	.	102	*	.	.	102	.	102	0.15
1987	632	28	.	28	*	.	.	28	.	28	0.04
1988	1645	128	.	128	*	.	.	128	.	128	0.08
1989	1226	66	.	66	*	.	.	66	.	66	0.05
1990	827	49	.	49	*	.	.	49	.	49	0.06
1991	644	36	.	36	*	.	.	36	.	36	0.06
1992	1313	40	0	40	*	0	0	40	0	40	0.03
1993	1107	58	3	61	*	0	0	58	3	61	0.06
1994	1162	71	0	71	*	0	0	71	0	71	0.06
1995	1425	170	0	170	*	0	0	170	0	170	0.12
1996	1603	139	3	142	*	0	0	139	3	142	0.09
1997**		9	0	9	*	4	4	9	4	13	
84-89 $\bar{X}$	1317.4	100.8	.	100.8	.	.	.	101.6	.	101.6	0.08
95% CL	481.5	28.5	.	28.5	.	.	.	28.3	.	28.3	0.03
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	1008.4	76.2	.	76.2	.	.	.	76.2	.	76.2	0.08
95% CL	524.3	47.3	.	47.3	.	.	.	47.3	.	47.3	0.04
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	1322.0	95.6	1.2	96.8	0.0	0.0	0.0	95.6	1.2	96.8	0.07
95% CL	249.4	69.5	2.0	69.6	0.0	0.0	0.0	69.5	2.0	69.6	0.04
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1k. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 8, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	659	51	.	51	0	.	0	51	.	51	0.08
1975	527	87	.	87	0	.	0	87	.	87	0.17
1976	514	80	.	80	0	.	0	80	.	80	0.16
1977	530	81	.	81	0	.	0	81	.	81	0.15
1978	269	44	.	44	0	.	0	44	.	44	0.16
1979	331	100	.	100	0	.	0	100	.	100	0.30
1980	316	120	.	120	0	.	0	120	.	120	0.38
1981	384	77	.	77	0	.	0	77	.	77	0.20
1982	538	85	.	85	9	.	9	94	.	94	0.17
1983	414	41	.	41	5	.	5	46	.	46	0.11
1984	357	79	.	79	0	.	0	79	.	79	0.22
1985	611	103	.	103	*	.	.	103	.	103	0.17
1986	696	138	.	138	*	.	.	138	.	138	0.20
1987	268	43	.	43	*	.	.	43	.	43	0.16
1988	474	79	.	79	*	.	.	79	.	79	0.17
1989	330	99	.	99	*	.	.	99	.	99	0.30
1990	349	86	.	86	*	.	.	86	.	86	0.25
1991	324	11	.	11	*	.	.	11	.	11	0.03
1992	.	.	.	.	*	.	.	.	.	.	.
1993	458	53	2	55	*	0	0	53	2	55	0.12
1994	265	57	1	58	*	0	0	57	1	58	0.22
1995	400	73	2	75	*	0	0	73	2	75	0.19
1996	518	59	0	59	*	0	0	59	0	59	0.11
1997**		7	5	12	*	0	0	7	5	12	
84-89 $\bar{X}$	493.6	99.6	.	99.6	.	.	.	99.6	.	99.6	0.20
95% CL	196.8	30.0	.	30.0	.	.	.	30.0	.	30.0	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	434.6	82.6	.	82.6	.	.	.	82.6	.	82.6	0.19
95% CL	196.7	57.2	.	57.2	.	.	.	57.2	.	57.2	0.09
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	410.3	60.5	1.3	61.8	0.0	0.0	0.0	60.5	1.3	61.8	0.15
95% CL	172.1	13.8	1.5	14.3	0.0	0.0	0.0	13.8	1.5	14.3	0.07
N	4	4	4	4	4	4	4	4	4	4	4

1987 DATA NOT INCLUDED IN MEAN.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1l. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 9, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9162	1494	.	1494	9	.	9	1503	.	1503	0.16
1975	10046	1872	.	1872	6	.	6	1878	.	1878	0.19
1976	8809	1623	.	1623	12	.	12	1635	.	1635	0.19
1977	8766	1080	.	1080	9	.	9	1089	.	1089	0.12
1978	7224	1303	.	1303	17	.	17	1320	.	1320	0.18
1979	5859	1704	.	1704	15	.	15	1719	.	1719	0.29
1980	6446	2379	.	2379	61	.	61	2440	.	2440	0.38
1981	6343	1862	.	1862	52	.	52	1914	.	1914	0.30
1982	8574	1825	.	1825	33	.	33	1858	.	1858	0.22
1983	10754	2303	.	2303	71	.	71	2374	.	2374	0.22
1984	8754	2264	.	2264	5	.	5	2269	.	2269	0.26
1985	9385	1750	.	1750	*	.	.	1750	.	1750	0.19
1986	8807	2298	.	2298	*	.	.	2298	.	2298	0.26
1987	5994	867	.	867	*	.	.	867	.	867	0.14
1988	7157	1373	.	1373	*	.	.	1373	.	1373	0.19
1989	7039	1315	.	1315	*	.	.	1315	.	1315	0.19
1990	8240	1866	.	1866	*	.	.	1866	.	1866	0.23
1991	6482	560	.	560	*	.	.	560	.	560	0.09
1992	6177	690	196	886	*	1	1	690	197	887	0.14
1993	10344	1431	151	1582	*	15	15	1431	166	1597	0.15
1994	7154	829	93	922	*	2	2	829	95	924	0.13
1995	10487	1594	307	1901	*	11	11	1594	318	1912	0.18
1996	10365	1371	251	1622	*	25	25	1371	276	1647	0.16
1997**		492	277	769	*	54	54	492	331	823	
84-89 $\bar{X}$	8228.4	1800.0	.	1800.0	.	.	.	1801.0	.	1801.0	0.22
95% CL	1318.4	583.4	.	583.4	.	.	.	584.9	.	584.9	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	7545.0	1482.4	.	1482.4	.	.	.	1482.4	.	1482.4	0.20
95% CL	1179.8	810.1	.	810.1	.	.	.	810.1	.	810.1	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	8905.4	1183.0	199.6	1382.6	0.0	10.8	10.8	1183.0	210.4	1393.4	0.16
95% CL	2575.3	494.3	103.7	563.7	0.0	12.3	12.3	494.3	109.9	572.8	0.02
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1m. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 10, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot	CPUE
1974	10987	1212	.	1212	14	.	14	1226	.	1226	0.11
1975	5999	427	.	427	9	.	9	436	.	436	0.07
1976	8811	730	.	730	10	.	10	740	.	740	0.08
1977	7213	1097	.	1097	5	.	5	1102	.	1102	0.15
1978	8764	1595	.	1595	42	.	42	1637	.	1637	0.19
1979	6405	849	.	849	8	.	8	857	.	857	0.13
1980	9588	1524	.	1524	27	.	27	1551	.	1551	0.16
1981	9309	1317	.	1317	29	.	29	1346	.	1346	0.14
1982	9331	1256	.	1256	10	.	10	1266	.	1266	0.14
1983	9173	1140	.	1140	79	.	79	1219	.	1219	0.13
1984	6361	1457	.	1457	2	.	2	1459	.	1459	0.23
1985	6887	1326	.	1326	*	.	.	1326	.	1326	0.19
1986	6387	1535	.	1535	*	.	.	1535	.	1535	0.24
1987	3348	429	.	429	*	.	.	429	.	429	0.13
1988	5198	1142	.	1142	*	.	.	1142	.	1142	0.22
1989	4709	898	.	898	*	.	.	898	.	898	0.19
1990	4778	835	.	835	*	.	.	835	.	835	0.17
1991	2960	230	.	230	*	.	.	230	.	230	0.08
1992	3422	245	497	742	*	6	6	245	503	748	0.22
1993	7656	700	691	1391	*	26	26	700	717	1417	0.19
1994	7028	946	150	1096	*	21	21	946	171	1117	0.16
1995	10210	1450	254	1704	*	23	23	1450	277	1727	0.17
1996	15128	2092	428	2520	*	88	88	2092	516	2608	0.17
1997**		699	395	1094	*	75	75	699	470	1169	
84-89 $\bar{X}$	5908.4	1271.6	.	1271.6	.	.	.	1272.0	.	1272.0	0.22
95% CL	1133.5	318.4	.	318.4	.	.	.	318.8	.	318.8	0.03
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	4806.4	928.0	.	928.0	.	.	.	928.0	.	928.0	0.19
95% CL	1529.5	592.5	.	592.5	.	.	.	592.5	.	592.5	0.06
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	8688.8	1086.6	404.0	1490.6	0.0	32.8	32.8	1086.6	436.8	1523.4	0.18
95% CL	5387.9	882.3	262.3	840.0	0.0	39.5	39.5	882.3	267.2	876.9	0.02
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1n. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 11, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9119	4476	.	4476	38	.	38	4514	.	4514	0.50
1975	8473	4501	.	4501	40	.	40	4541	.	4541	0.54
1976	8681	4164	.	4164	42	.	42	4206	.	4206	0.48
1977	7966	4096	.	4096	18	.	18	4114	.	4114	0.52
1978	8050	3996	.	3996	18	.	18	4014	.	4014	0.50
1979	6570	3430	.	3430	7	.	7	3437	.	3437	0.52
1980	10010	5069	.	5069	44	.	44	5113	.	5113	0.51
1981	12836	7062	.	7062	41	.	41	7103	.	7103	0.55
1982	15334	7338	.	7338	53	.	53	7391	.	7391	0.48
1983	15419	4769	.	4769	27	.	27	4796	.	4796	0.31
1984	15385	7019	.	7019	15	.	15	7034	.	7034	0.46
1985	13712	5823	.	5823	*	.	.	5823	.	5823	0.42
1986	15233	5546	.	5546	*	.	.	5546	.	5546	0.36
1987	11309	3829	.	3829	*	.	.	3829	.	3829	0.34
1988	14811	5033	.	5033	*	.	.	5033	.	5033	0.34
1989	11543	2960	.	2960	*	.	.	2960	.	2960	0.26
1990	12520	4446	.	4446	*	.	.	4446	.	4446	0.36
1991	7647	1853	.	1853	*	.	.	1853	.	1853	0.24
1992	8501	2273	1039	3312	*	1	1	2273	1040	3313	0.39
1993	11280	3084	664	3748	*	43	43	3084	707	3791	0.34
1994	10891	2280	674	2954	*	38	38	2280	712	2992	0.27
1995	14449	3255	938	4193	*	13	13	3255	951	4206	0.29
1996	16135	4035	1746	5781	*	26	26	4035	1772	5807	0.36
1997**		2315	2001	4316	*	130	130	2315	2131	4446	
84-89 $\bar{X}$	14136.8	5276.2	.	5276.2	.	.	.	5279.2	.	5279.2	0.37
95% CL	1974.9	1844.8	.	1844.8	.	.	.	1850.3	.	1850.3	0.09
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	12350.8	3967.6	.	3967.6	.	.	.	3967.6	.	3967.6	0.32
95% CL	3784.3	1897.3	.	1897.3	.	.	.	1897.3	.	1897.3	0.06
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	12251.2	2985.4	1012.2	3997.6	0.0	24.2	24.2	2985.4	1036.4	4021.8	0.33
95% CL	3764.1	918.4	548.3	1365.6	0.0	21.6	21.6	918.4	541.9	1365.2	0.05
N	5	5	5	5	5	5	5	5	5	5	5

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-97 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1o. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 12, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1423	658	.	658	13	.	13	671	.	671	0.47
1975	1204	510	.	510	20	.	20	530	.	530	0.44
1976	926	297	.	297	5	.	5	302	.	302	0.33
1977	1238	558	.	558	48	.	48	606	.	606	0.49
1978	1305	366	.	366	20	.	20	386	.	386	0.30
1979	1711	733	.	733	10	.	10	743	.	743	0.43
1980	2175	820	.	820	29	.	29	849	.	849	0.39
1981	2035	1060	.	1060	17	.	17	1077	.	1077	0.53
1982	2810	1555	.	1555	15	.	15	1570	.	1570	0.56
1983	2648	667	.	667	8	.	8	675	.	675	0.25
1984	3590	1922	.	1922	68	.	68	1990	.	1990	0.55
1985	3722	1097	.	1097	*	30	30	1097	30	1127	0.30
1986	3430	938	.	938	*	34	34	938	34	972	0.28
1987	2212	831	.	831	*	27	27	831	27	858	0.39
1988	3607	1413	.	1413	*	23	23	1413	23	1436	0.40
1989	2657	560	.	560	*	10	10	560	10	570	0.21
1990	3060	856	.	856	*	30	30	856	30	886	0.29
1991	2761	644	.	644	*	15	15	644	15	659	0.24
1992	2831	639	466	1105	*	78	78	639	544	1183	0.42
1993	3362	745	155	900	*	22	22	745	177	922	0.27
1994	2853	593	137	730	*	48	48	593	185	778	0.27
1995	2679	507	87	594	*	41	41	507	128	635	0.24
1996	1612	462	168	630	*	27	27	462	195	657	0.41
1997**		630	474	1104	*	90	90	630	564	1194	
84-89 $\bar{X}$	3203.0	1126.8	.	1126.8	.	24.8	32.0	1138.2	24.8	1158.8	0.36
95% CL	649.4	505.5	.	505.5	.	11.4	20.4	529.3	11.4	522.9	0.13
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	2954.5	873.7	.	873.7	.	23.2	23.2	873.7	23.2	896.8	0.30
95% CL	543.4	314.3	.	314.3	.	9.6	9.6	314.3	9.6	318.8	0.08
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	2667.4	589.2	202.6	791.8	0.0	43.2	43.2	589.2	245.8	835.0	0.31
95% CL	799.2	138.4	186.7	262.6	0.0	27.4	27.4	138.4	209.4	280.1	0.10
N	5	5	5	5	5	5	5	5	5	5	5

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-97 AND ON RETAINED FISH ONLY PRIOR TO 1985.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
NOTE: DATA WERE UNAVAILABLE FOR SOME RIVERS IN SFA 12 FOR 1996.
**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1p. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 13, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	29313	7189	.	7189	916	.	916	8105	.	8105	0.28
1975	32253	12003	.	12003	886	.	886	12889	.	12889	0.40
1976	32922	10383	.	10383	626	.	626	11009	.	11009	0.33
1977	24474	6712	.	6712	1049	.	1049	7761	.	7761	0.32
1978	19686	5289	.	5289	855	.	855	6144	.	6144	0.31
1979	16383	6009	.	6009	113	.	113	6122	.	6122	0.37
1980	21313	7913	.	7913	993	.	993	8906	.	8906	0.42
1981	23839	9300	.	9300	663	.	663	9963	.	9963	0.42
1982	25246	9566	.	9566	595	.	595	10161	.	10161	0.40
1983	25473	6337	.	6337	610	.	610	6947	.	6947	0.27
1984	22152	7771	.	7771	309	.	309	8080	.	8080	0.36
1985	20137	5302	.	5302	*	257	257	5302	257	5559	0.28
1986	25707	7346	.	7346	*	662	662	7346	662	8008	0.31
1987	20887	6018	.	6018	*	342	342	6018	342	6360	0.30
1988	24356	8217	.	8217	*	406	406	8217	406	8623	0.35
1989	18544	3174	.	3174	*	129	129	3174	129	3303	0.18
1990	21769	6652	.	6652	*	337	337	6652	337	6989	0.32
1991	21028	5188	.	5188	*	204	204	5188	204	5392	0.26
1992	21629	5430	540	5970	*	947	947	5430	1487	6917	0.32
1993	22521	5099	829	5928	*	732	732	5099	1561	6660	0.30
1994	19723	3632	936	4568	*	929	929	3632	1865	5497	0.28
1995	18107	3336	1164	4500	*	948	948	3336	2112	5448	0.30
1996	15900	3759	1704	5463	*	494	494	3759	2198	5957	0.37
1997**		3725	6204	9929	*	1964	1964	3725	8168	11893	
84-89 $\bar{X}$	21963.8	6304.7	.	6304.7	.	359.2	350.8	6356.2	359.2	6655.5	0.30
95% CL	2814.9	1979.3	.	1979.3	.	246.4	187.6	2033.4	246.4	2112.7	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	22048.5	6099.2	.	6099.2	.	346.7	346.7	6099.2	346.7	6445.8	0.29
95% CL	2715.2	1862.2	.	1862.2	.	194.0	194.0	1862.2	194.0	2017.4	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	19576.0	4251.2	1034.6	5285.8	0.0	810.0	810.0	4251.2	1844.6	6095.8	0.31
95% CL	3318.5	1173.1	541.7	887.6	0.0	246.7	246.7	1173.1	395.1	830.5	0.04
N	5	5	5	5	5	5	5	5	5	5	5

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-97 AND ON RETAINED FISH ONLY PRIOR TO 1985.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
NOTE: DATA WERE UNAVAILABLE FOR SOME RIVERS IN SFA 13 FOR 1996.
**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY

Appendix 1q. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14A, insular Newfoundland, 1974-97. Ret. = retained fish; Rel. = released fish. The 1997 data, obtained from the licence stub return, are preliminary.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9569	3120	.	3120	113	.	113	3233	.	3233	0.34
1975	9259	4818	.	4818	90	.	90	4908	.	4908	0.53
1976	17146	7381	.	7381	100	.	100	7481	.	7481	0.44
1977	17067	5707	.	5707	472	.	472	6179	.	6179	0.36
1978	12069	3241	.	3241	72	.	72	3313	.	3313	0.27
1979	14285	6578	.	6578	59	.	59	6637	.	6637	0.46
1980	14219	3743	.	3743	180	.	180	3923	.	3923	0.28
1981	18718	5882	.	5882	137	.	137	6019	.	6019	0.32
1982	16113	4763	.	4763	107	.	107	4870	.	4870	0.30
1983	16020	3800	.	3800	69	.	69	3869	.	3869	0.24
1984	16497	4807	.	4807	87	.	87	4894	.	4894	0.30
1985	13388	3626	.	3626	*	28	28	3626	28	3654	0.27
1986	15382	5030	.	5030	*	102	102	5030	102	5132	0.33
1987	15061	4620	.	4620	*	41	41	4620	41	4661	0.31
1988	18968	6251	.	6251	*	171	171	6251	171	6422	0.34
1989	16223	3203	.	3203	*	44	44	3203	44	3247	0.20
1990	16413	5050	.	5050	*	136	136	5050	136	5186	0.32
1991	13850	3565	.	3565	*	117	117	3565	117	3682	0.27
1992	17117	4778	531	5309	*	369	369	4778	900	5678	0.33
1993	17858	3905	2002	5907	*	376	376	3905	2378	6283	0.35
1994	21046	4429	1097	5526	*	475	475	4429	1572	6001	0.29
1995	24159	6090	2087	8177	*	731	731	6090	2818	8908	0.37
1996	25876	6485	3008	9493	*	706	706	6485	3714	10199	0.39
1997**		3514	1802	5316	*	411	411	3514	2213	5727	
84-89 $\bar{X}$	15919.8	4589.5	.	4589.5	.	77.2	78.8	4604.0	77.2	4668.3	0.29
95% CL	1944.1	1135.7	.	1135.7	.	74.1	56.2	1139.9	74.1	1186.6	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15982.8	4619.8	.	4619.8	.	101.8	101.8	4619.8	101.8	4721.7	0.30
95% CL	1812.7	1162.6	.	1162.6	.	54.0	54.0	1162.6	54.0	1199.9	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	21211.2	5137.4	1745.0	6882.4	0.0	531.4	531.4	5137.4	2276.4	7413.8	0.35
95% CL	4747.0	1370.3	1189.5	2302.4	0.0	218.6	218.6	1370.3	1354.4	2504.4	0.05
N	5	5	5	5	5	5	5	5	5	5	5

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-97 AND ON RETAINED FISH ONLY PRIOR TO 1985.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.
**DATA OBTAINED FROM THE LICENSE STUB RETURN AND ARE PRELIMINARY